UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY

COMMENTS OF SOUTHERN COMPANY

on the

PROPOSED NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS; AND, IN THE ALTERNATIVE, PROPOSED STANDARDS OF PERFORMANCE FOR NEW AND EXISTING STATIONARY SOURCES: ELECTRIC UTILITY STEAM GENERATING UNITS (69 Fed. Reg. 4652 (January 30, 2004))

and

SUPPLEMENTAL NOTICE FOR THE PROPOSED NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS; AND, IN THE ALTERNATIVE, PROPOSED STANDARDS OF PERFORMANCE FOR NEW AND EXISTING STATIONARY SOURCES: ELECTRIC UTILITY STEAM GENERATING UNITS (69 Fed. Reg. 12398 (March 16, 2004))

Docket ID No. OAR-2002-0056

June 29, 2004

TABLE OF CONTENTS

Comments of Southern Company on the

Proposed National Emission Standards for Hazardous Air Pollutants; and, in the Alternative, Proposed Standards of Performance for New and Existing Stationary Sources: Electric Utility Steam Generating Units (69 Fed. Reg. 4652 (January 30, 2004))

and

Supplemental Notice for the Proposed National Emission Standards for Hazardous Air Pollutants; and, in the Alternative, Proposed Standards of Performance for New and Existing Stationary Sources: Electric Utility Steam Generating Units (69 Fed. Reg. 12398 (March 16, 2004))

Docket ID No. OAR-2002-0056

Southern Company Services, Inc., on behalf of the operating subsidiaries of its parent corporation Southern Company, (hereafter collectively or individually referred to as "Southern") offers the following comments on the U.S. Environmental Protection Agency's ("EPA") "Proposed National Emission Standards for Hazardous Air Pollutant; and in the Alternative, Proposed Standards of Performance for New and Existing Stationary Sources: Electric Utility Steam Generating Units"[1] and "Supplemental Notice for the Proposed National Emission Standards for Hazardous Air Pollutants; and in the Alternative, Proposed Standards of Performance for New and Existing Stationary Sources: Electric Utility Steam Generating Units."[2] Southern owns and operates numerous electric utility steam generating units in Georgia, Alabama, Mississippi, and Florida, and thus will be directly impacted by EPA's proposal. Southern appreciates the opportunity to comment on EPA's proposal. As discussed below, Southern has several specific comments and concerns regarding EPA's proposal that should be addressed before implementation of any mercury emission standards. These are discussed in

[1] 69 Fed. Reg. 4652-752 (Jan. 30, 2004).

[2] 69 Fed. Reg. 12398-472 (Mar. 16, 2004).

detail below and in the attached technical reports. In addition, Southern joins in the comments of the Utility Air Regulatory Group ("UARG") and urges EPA to consider those comments as well.

SUMMARY

EPA's proposal contemplates controlling the emissions of two hazardous air pollutants from electric utility steam generating units -- mercury from coal-fired units and nickel from oil-fired units. EPA has concluded that the existing scientific evidence does not substantiate a public health concern for any other emission from these units. Southern agrees with EPA's conclusions concerning the absence of risk posed by air emissions other than mercury and nickel. As for mercury and nickel, however, Southern does not believe that an adequate factual record exists to support EPA's conclusion that mercury emissions from coal-fired units and nickel emissions from oil-fired units pose sufficient public health concerns to warrant regulation.

EPA cannot justify its decision to list mercury either legally or factually. In addition, nothing in EPA's actions or public statements provided notice to anyone that EPA would list coal- and oil-fired electric utility steam generating units under § 112(c) of the Clean Air Act ("CAA" or "Act"). Contrary to the conclusion of former EPA Administrator Browner that listing under § 112(c) was required, § 112(n)(1)(A) of the Act provides the Agency with broad discretion to address any specific public health risks identified in EPA's Utility Report to Congress. Instead of requiring the prescriptive control strategies mandated by regulation under § 112(d), § 112(n)(1)(A) requires EPA to "develop and describe" alternative control strategies for emissions that may warrant regulation. The legislative history of § 112 establishes that EPA did not intend to subject electric utility steam generating units to the regulatory scheme of §§ 112(c) and 112(d).

Moreover, the factual record underlying EPA's December 2000 listing decision fails to support EPA's conclusion that mercury emissions from coal-fired power plants pose a risk to

public health such that regulation of mercury emissions is "appropriate and necessary." Furthermore, a comprehensive assessment of the available scientific evidence does not support a conclusion that mercury emissions from coal-fired power plants pose a risk to public health.

First, it is incorrect to assume that a percentage reduction in mercury emissions from coal-fired power plants will result in an equivalent reduction in mercury levels in fish. Modeling studies demonstrate that less than 8% of the mercury deposited in the United States comes from coal-fired power plants, whereas about 70% comes from natural or foreign sources. Moreover, only one mercury compound -- methylmercury -- raises human health concerns. Coal-fired power plants do not emit methylmercury, and mercury emissions from coal-fired plants convert to methylmercury only if the mercury finds its way into a waterbody where mercury can both convert to methylmercury and accumulate in biota to levels of concern.

Nor do fish advisories support a determination that mercury emissions from coal-fired power plants pose a human health concern because they do not distinguish among the numerous sources of mercury entering the waterbody, including mercury from historic sources. The methods states use to develop fish advisories are also inconsistent. The existence of a fish advisory does not establish the existence of a health risk: all that a fish advisory does show is that the levels of a certain chemical in certain fish are at or above certain levels.

Recent assessments of the available scientific evidence demonstrate that EPA's conclusion that public health risks from coal-fired power plant mercury emissions warrant regulation is flawed. EPA's "plausible link" between coal-fired power plant mercury emissions and mercury levels in fish is simplistic and inadequate: detailed modeling studies show that less than 8% of the mercury deposited in the United States comes from coal-fired power plants and that EPA's proposed mercury emission reduction rules would decrease exposure to mercury in

fish, even among high-end consumers, by about 1.5% on average (and at most by about 6.5% in some states).

Furthermore, EPA's reference in the preamble to the recent finding of the Center for Disease Control ("CDC") from its National Health and Nutrition Examination Survey ("NHANES") that 8% of women of childbearing age have levels of mercury in their blood above EPA's reference dose ("RfD") implies an imminent public health risk from coal-fired power plants that must be scrutinized. EPA's RfD for methylmercury is lower than any comparable value developed by any other federal or international agency and is based on highly conservative assumptions. EPA's reliance on the RfD as an absolute threshold for health risk is inappropriate because with all of its safety factors, it represents only a conservative screening level -- not the level of effect that the benchmark dose ("BMD") would represent. EPA has used the finding to assert that these levels signal a population "at risk" of adverse health effects from mercury exposure; however, scrutiny of the CDC data and the results of detailed exposure assessments reveal a number of relevant facts:

- In reviewing the pool of 8% of women with higher levels of mercury in their blood, the woman with the highest mercury level was at about half the level at which health effects have been measured (the BMD);
- The fact that 8% of women have blood levels that fall above EPA's RfD is entirely due to the uncertainty factor that EPA chose for its RfD;
- Comparisons using the suggested exposure levels used by other agencies would identify far fewer women as having elevated levels of mercury in their blood. For example under the RfDs established by the World Health Organization ("WHO") and Agency for Toxic

Substances and Disease Registry ("ATSDR"), the percentages of women over the RfD would be less than 2% and less than 1% respectively;

- The difference in neurobehavioral test scores between the lowest-exposed and the highest-exposed groups in the study used to determine the BMD and set the numerical value of EPA's RfD is so small that there is no discernable adverse neurobehavioral effect for exposure levels from the current RfD up to 4 times the RfD;
- A reduction of mercury emissions from coal-fired power plants to 15 tons per year would decrease the mercury exposure of women of childbearing age by less than 1.5% on average, and only up to 6.5% at most. This is one of a string of analyses that have repeatedly shown that U.S. exposure, and changes in exposure, to mercury are insensitive to power plant mercury emissions -- and more particularly to reductions in those emissions. These findings have held for analyses spanning strategies from moderate (the proposed MACT rule) to stringent (a hypothetical 95% cut in utility emissions). One reason for this is that the U.S. fish diet is heavily weighted toward marine fish, which is less sensitive to changes in U.S. mercury alone; and
- A reduction of mercury emissions from coal-fired power plants, beyond those resulting from the SO_2 and NOx controls in EPA's proposed Clean Air Interstate Rule ("CAIR") program, to 15 tons per year would incrementally decrease the fraction of women of childbearing age with mercury blood levels above EPA's RfD by less than 0.1%.

The rulemaking record does not contain sufficient factual evidence to conclude that mercury emissions from coal-fired power plants present a public health concern; rather, the evidence shows that a reduction in coal-fired power plant mercury emissions will yield minimal, if any, health benefits.

If EPA proceeds to regulate mercury emissions from coal-fired power plants, Southern greatly prefers that EPA establish a cap-and-trade program rather than develop maximum achievable control technology ("MACT") standards under § 112(d) and believes that EPA should not use the MACT regulatory scheme to control coal-fired power plant mercury emissions because it is entirely inappropriate. Nevertheless, if EPA decides to adopt the MACT approach, Southern supports EPA's decision to subcategorize electric utility steam generating units. EPA should place oil-fired units in a different category than coal-fired units because emissions from those plants differ markedly. Similarly, EPA should subcategorize units based on differences between coal ranks (e.g., bituminous, subbituminous, and lignite coals) because the burning of different coals produces different amounts and forms of mercury. Southern does not believe, however, that EPA should place units burning coals of more than one rank in a separate subcategory because large differences exist in the way plants burn coals of more than one rank. Fluidized bed combustion units should also be placed in their own subcategory because they have fundamentally different processes than conventional boilers. Southern also opposes including integrated gasification combined cycle units in this rulemaking because those units differ fundamentally from electric steam generating units.

If EPA chooses to adopt a MACT approach, Southern generally supports the MACT floors that EPA has proposed for existing sources. EPA should include, however, the approach recommended by the majority of industry participants in EPA's Utility MACT Working Group meetings of providing units with the option of choosing between alternative standards based on either a stack limit or a percentage reduction to address the wide variations in mercury levels in coal. In addition, the proposed new source MACT limits are unacceptably low and fail to account for all sources of variability. If EPA retains the proposed new source MACT limits, the

use of most coals in the United States would effectively be excluded, making the construction of new coal-fired units difficult, if not impossible. Because the new source MACT limits are too low, EPA must revise them in any final MACT rule.

Southern supports EPA's determination that available technologies or work processes do not provide a viable basis for establishing standards beyond the MACT floors. Southern agrees with EPA that 90% control of mercury emissions cannot be achieved with any currently available technologies and that mercury control technologies are not currently commercially available.

EPA should exercise its discretionary authority under § 112(i)(3)(B) of the Act to extend the time for all sources to comply with MACT limits by one year. This is necessary to ensure that: (1) mercury-specific control equipment becomes commercially available; (2) the public has reliable electric service throughout the retrofit period; (3) sources have time to obtain necessary state permits; and (4) skilled labor and construction equipment are available. Further, EPA should give strong consideration to pursuit of the presidential exemptions available in CAA § 112(i)(4) because of the lack of currently available mercury-specific control technology. It is certainly clear, given the blackout of the summer of 2003, that electricity availability is crucial to the United States.

With regard to EPA's proposal to issue MACT limits to control nickel emissions from oil-fired units, EPA does not have statutory authority to regulate these emissions. EPA's December 2000 listing decision does not contain any factual bases for its decision to list oil-fired electric utility steam generating units under § 112(c). Because the evidence in the rulemaking record fails to show that a public health risk associated with nickel emissions from oil-fired units

exists, regulation of those emissions is not "appropriate and necessary" (as required by the CAA), and EPA should rescind its listing decision for oil-fired units.

Even if EPA establishes that it has legal authority under the Act to regulate nickel emissions from oil-fired units, the existing database cannot support EPA's MACT floor analysis. EPA based the nickel MACT floor on approximately three hours of operational data from twelve units, which had significant variability. This variability alone provides enough reason for EPA to seek additional data before setting a MACT floor, particularly because twelve units is too small a data set for establishing a MACT floor.

Southern supports EPA's decision to exclude units that burn oil less than 2% of the time from compliance with the nickel emission limits applicable to oil-fired units. Southern believes, however, that EPA should raise this limit to 10% to coincide with the limit already in use in the Acid Rain program. EPA also needs to clarify exactly how it plans to determine this exemption. EPA should state that the applicability of the exemption is based on oil use as a percent of the unit's annual heat input.

Southern also supports EPA's proposal to exclude oil-fired units that burn exclusively distillate oil from compliance with the nickel emission rules. EPA should also clarify, however, how this rule will be applied to units that burn only distillate oil and natural gas. Southern supports excluding units that burn exclusively distillate oil, in combination with natural gas, from compliance with the rules.

Southern also agrees with EPA's determination that fabric filtration is not a viable option for oil-fired units because the nature of oil-fired emissions differs inherently from coal-fired unit emissions.

If EPA proceeds to regulate mercury emissions from coal-fired power plants, Southern supports EPA's proposal to regulate mercury emissions using a cap-and-trade approach and believes that any cap-and-trade approach should be adopted through promulgation of a federal program under § 112(n)(1)(A) of the Act, or alternatively, under § 111. The proposed cap-and-trade program will achieve a greater amount of mercury reductions from coal-fired power plants at far less cost than the proposed MACT alternative. Because mercury emissions are a global issue, it makes little sense to impose command-and-control MACT requirements on every coal-fired plant.

Southern believes that EPA should modify its cap-and-trade proposal, however, to include three phases. During Phase 1, which would begin in 2010, no nationwide numeric mercury limit would be established. Instead, reductions in mercury emissions would be achieved as co-benefits from the installation of new control equipment to comply with EPA's Clean Air Interstate Rule. Under Phase 2, which would begin in 2015, EPA would establish a cap of 24 tons per year on mercury emissions from coal-fired power plants. The trading program would begin during this phase, with allowances allocated based on heat input -- adjusted by factors of 1.0 for bituminous units, 1.5 for subbituminous units, and 3.0 for lignite units. Phase 3 of the program would begin in 2018 with the cap on mercury emissions being reduced to 15 tons per year.

Although Southern agrees that EPA has legal authority under either § 111 or § 112 to promulgate a cap-and-trade program, Southern believes a cap-and-trade program under § 112 would create a more efficient regulatory structure that avoids a patchwork system from one state to the next that could result under § 111. Southern also believes that § 112 provides a more legally defensible and stronger basis for the trading program. Implementation of a cap-and-trade

program under § 112 is superior to § 111 because it will be federally implemented with one national procedure.

Despite Southern's support for a § 112 trading program, Southern does believe that EPA has adequately supported its legal authority to promulgate a cap-and-trade program under § 111. Southern disagrees, however, with EPA's proposal to allow states to opt out of a § 111 trading program. Because promulgation of a § 111 trading program would necessitate a determination by EPA that the program is the "best system" for reducing mercury emissions from coal-fired power plants, states cannot interfere with that determination. Although states do have some authority under § 111, they lack authority to change the standard of performance set by EPA. If EPA permits states to opt out of a § 111 trading program, this will in essence allow states to change the standard of performance, which the CAA does not authorize. Similarly, states cannot issue only a portion of the allowances available within the state because this would also permit that state to modify the federally determined standard of performance.

No mercury "hot spots" currently exist in the United States, and EPA's proposed cap-and-trade program will not create them. The scientific literature does not show any evidence of elevated mercury deposition levels near coal-fired power plants, and detailed modeling work has shown that only small percentages of mercury emissions deposit near those plants -- and even these low amounts are likely to be an overestimate because oxidized mercury emitted from coal-fired power plants appear to be rapidly converted to elemental mercury. A report released by the Florida Department of Environmental Protection is flawed in that it fails to explore completely the relationship between local mercury emissions reductions and decreasing levels of mercury in biota. The report also fails to examine, to the extent that relationship can be understood, the degree to which it applies to coal-fired power plants in other parts of the country. Indeed,

because south Florida presents a unique combination of emissions, climatology, and ecosystems and because municipal and medical waste incinerators -- not power plants -- are the source of the industrial mercury emissions referenced in the report, it is inappropriate to extrapolate the Florida results to other areas of the country or to other sources.

Southern suggests using the average of the three highest annual heat input levels from the period 1999 to 2003 to calculate the baseline heat input for allowance allocation. This is closer in time to when the actual trading program begins under EPA's proposal and still avoids opportunities to affect the baseline. Southern also suggests that EPA should permit units that had a significant change in their coal-type usage since 1999 to provide EPA with that information before allocations are finalized. With regard to allowance allocations, Southern supports permanent allocations of mercury allowances because this provides units with the greatest amount of certainty, provides units with an incentive to improve energy efficiency, and requires fewer resources to administer than an updated allocation system. Southern also opposes auctions of emission allowances. If EPA decides to permit auctions, however, auctions should not be for the initial allocations of allowances, but only for a very small percentage of allowances each year as in the Title IV program.

Southern generally supports EPA's proposal to have a safety valve provision for the mercury cap-and-trade program. EPA needs to change its proposal, however, to structure it so that units borrow from future allowances already allocated to them and not from the general pool of allowances. This will avoid a situation where units that did not borrow allowances are forced to bear part of the burden of a reduced number of available allowances in future years.

Southern supports EPA's proposal to allow banking of allowances without restriction. Southern also supports the creation of an early reduction credit program for the mercury trading

program. Southern also supports excluding units that emit less than 25 pounds per year of mercury from the cap-and-trade program, provided that EPA does not reduce the overall cap for mercury emissions by the small amounts that these sources emit.

In order for the trading program to be successful, EPA needs to prohibit states from interfering with any mercury cap-and-trade program. Although states are permitted under the Act to impose more stringent emissions limitations on sources within their borders, states must be expressly prohibited from restricting the ability of sources to sell or trade mercury allowances. Similarly, EPA needs to prohibit states from interfering with the EPA-established cap on mercury emissions. In the final rule, EPA needs to make clear that states cannot require sources within their borders to surrender more allowances than federally required and cannot place restrictions on the sale of mercury allowances by sources within their borders.

EPA should not require units in "sensitive" areas to surrender more allowances than other areas deemed less sensitive because this will significantly and unnecessarily complicate the trading program and will lower the cap. In addition, EPA's proposal does not describe how such "sensitive" areas would be defined, and only a very small portion of mercury emissions from coal-fired power plants deposit within 50 kilometers in any event. Adoption of this proposal will only add a great deal of complexity to the program.

With regard to monitoring and compliance issues, Southern believes that both proposed measurement methods for mercury (proposed Performance Specification 12A for mercury continuous emissions monitoring system and the proposed Method 324 sorbent trap monitoring system) are reasonable first steps in the process of defining requirements for use of these relatively new technologies as compliance methods. Because of the uncertainties surrounding how the technologies will perform in the field, however, Southern urges EPA to continue to

evaluate data between now and the established compliance date to identify any necessary improvements or adjustments.

If EPA decides to proceed with its MACT proposal, Southern supports EPA's decision to allow sources the option of using either a mercury continuous emissions monitoring system or Method 324 to measure mercury emissions. Southern also supports EPA's decision to provide operational flexibility for mercury compliance through use of provisions for blended-fuel units and multiple unit compliance options. If EPA decides to regulate oil-fired units, then Southern agrees that periodic stack testing is appropriate. Southern disagrees, however, with EPA's proposal to impose operating limits based on control device parameters. Instead, EPA should employ an approach similar to its Compliance Assurance Monitoring rule.

In the proposed cap-and-trade program, Southern disagrees with EPA's proposal to restrict use of Method 324 sorbent trap monitoring systems to some small class of units that either meets a low-emitter threshold or that performs additional quality assurance. Also, EPA's proposed application of the missing data procedures for sulfur dioxide to mercury and bias adjustment procedures for other monitoring procedures is not supported.

DISCUSSION

I. EPA Cannot Justify Its December 2000 Listing Decision Either Legally or Factually.

EPA's December 2000 listing decision cannot be justified legally or factually. Because EPA did not seek public input on its action, it was never challenged to explain and defend its action in the face of public scrutiny. In addition, nothing in EPA's actions or public statements would have put anyone on notice that EPA would list coal- and oil-fired electric utility steam generating units under § 112(c) of the CAA. In fact, although EPA's Utility Report to Congress described mercury as the hazardous pollutant of "greatest concern," it expressly declined to include a regulatory determination that mercury emissions from coal-fired power plants

presented any concerns for public health, delaying any such determination on that issue to an unspecified future date.[3]

A. Section 112(n)(1)(A) Provides EPA with Broad Discretion To Address any Public Health Risks from Mercury Emissions from Coal-Fired Electric Utility Steam Generating Units.

Even though EPA's Utility Report to Congress did not make a regulatory determination regarding possible public health concerns related to mercury emissions from coal-fired power plants, EPA Administrator Browner determined in the December 2000 listing decision that regulation of these sources was "appropriate and necessary" because, in EPA's view, the emissions posed a public health concern.[4] Moreover, Administrator Browner also concluded that once she had determined that regulation was "necessary and appropriate," the only regulatory option was to list electric utilities under § 112(c) and proceed to develop MACT standards under § 112(d).[5] This conclusion contradicted earlier EPA statements acknowledging that it has regulatory flexibility under § 112(n)(1)(A).[6]

---

[3] *Study of Hazardous Air Pollutant Emissions from Electric Utility Steam Generating Units -- Final Report to Congress*, EPA-453/R-98-004a (February 1998), at ES-1.

[4] 65 Fed. Reg. 79825, 79830 (Dec. 20, 2000). EPA's December 2000 listing decision also contained a finding that mercury emissions posed an environmental concern. EPA has correctly recognized in its rulemaking proposal that this portion of the listing decision was legally incorrect because the Act requires the EPA Administrator to look only at possible public health concerns in making a determination whether regulation is "appropriate and necessary." 69 Fed. Reg. at 4683.

[5] *See* 65 Fed. Reg. at 79825; *see also* EPA Motion to Dismiss, *Utility Air Regulatory Group v. EPA*, D.C. Cir. Docket No. 01-1074, at 10 (Apr. 9, 2001).

[6] *See* Brief of Respondents EPA *et al.*, *NRDC v. EPA*, No. 92-1415, at 25-26 (D.C. Cir. Sept. 14, 1993) (emphasizing EPA's discretion to determine whether regulation is "appropriate and necessary" based on the results of the study required under § 112(n)(1)); *see also* Determination of Adequacy of Section 112 Authorities and Determination of Need for Additional Standards, 63 Fed. Reg. 14090, 14105 (1998) (emphasizing that regulation of hazardous air pollutant ("HAP") emissions can be by other means than imposition of MACT standards based on EPA's "necessary and appropriate" determination).

In fact, § 112(n)(1)(A) gives EPA broad discretion to address any specific public health risks identified by EPA in its Utility Report to Congress. Section 112(n)(1)(A) requires EPA to regulate "*under this section*" if regulation is found to be "appropriate and necessary." Nothing in § 112(n)(1)(A) specifies that EPA must regulate under § 112(d) or any other provision of § 112. Section 112(n)(1)(A) instead requires EPA to "develop and describe" alternative control strategies for emissions that may warrant regulation. Congress would not have required EPA to develop alternative control strategies if it only granted EPA the authority to regulate under the provisions of § 112(d); this would have made no sense because § 112(d) specifically delineates how EPA is to set emissions standards (i.e., using control strategies).

Thus, the legislative history of § 112 supports a broad reading of EPA's options under § 112(n)(1)(A). Congress singled out electric utility steam generating units and treated them differently from all other source categories under § 112.[7] Congress did not subject these units to the § 112(c)/§ 112(d) regulatory scheme but instead enacted § 112(n)(1)(A) to govern any § 112 regulation of these units.

EPA's December 2000 listing decision is legally deficient because it rests on an incorrect interpretation of § 112(n)(1)(A) that ignores Congressional intent that mercury emissions from electric utility steam generating units be controlled in the most efficient way possible.[8] Consequently, EPA must reconsider and reverse its listing decision to correct these deficiencies during this rulemaking proceeding.

---

[7] Congress recognized that electric utility steam generating units were targeted for regulation under a number of provisions of the 1990 CAA Amendments, including the "acid rain" provisions of Title IV (CAA §§ 401-416, 42 U.S.C. §§ 7651a-7651o).

[8] *See, e.g.*, 136 Cong. Rec. H12934 (daily ed. Oct. 26, 1990), *reprinted in A Legislative History of the Clean Air Act Amendments of 1990*, Vol. 1, at 1416-17 (1993) (statement of Rep. Oxley explaining the intent of § 112(n)(1)(A)).

B. The Factual Record Does Not Support EPA's Determination that Regulation of Mercury Emissions from Coal-Fired Power Plants Is "Appropriate and Necessary."

EPA's December 2000 decision fails to provide a concise explanation of the factual bases underlying EPA's conclusion that mercury emissions from coal-fired power plants pose a risk to public health such that regulation is "appropriate and necessary." The December 2000 decision mentions in various places that: (1) a "plausible link" exists (that EPA admits cannot be quantified) between mercury emissions from coal-fired power plants and mercury levels in fish; (2) 40 states have fish advisories for mercury in waterbodies; (3) mercury is a persistent, bioaccumulative toxic ("PBT") chemical; and (4) electric utility steam generating units cumulatively comprise the largest anthropogenic source of mercury emissions in the United States. EPA's rulemaking proposal merely repeats many of these same assertions, adding that the recent NHANES survey shows that 8% of women of child bearing age have blood mercury levels above EPA's RfD for mercury. In so doing, EPA implicitly rejects the evidence offered by EPRI that the risks posed by utility mercury emissions can be quantified and in fact are exceedingly small. These assertions and rejections of newer information, taken individually or collectively, do not establish public health concerns warranting a determination that regulation of mercury emissions from coal-fired power plants is "appropriate and necessary."

1. EPA's Reference Dose for Methylmercury Is Not an Appropriate Indicator for the Assessment of Public Health Risk.

Federal and international agencies have disagreed for many years regarding the appropriate RfD for methylmercury, and the issue remains controversial. EPA's RfD is lower than any comparable value developed by any other federal or international agency. EPA's RfD rests on a series of highly conservative assumptions, and EPA summarily dismissed public comments criticizing it. EPA originally developed its reference concentration ("RfC")/RfD

methodology as a screening tool to identify "residual risk" for non-carcinogenic threshold pollutants under CAA § 112(f).[9] EPA never designed the methodology to determine whether actual health risks exist or to quantify their magnitude. EPA has recognized that "[e]xceeding the RfC does not necessarily indicate that a public health risk will occur,"[10] and in its 1991 early reduction rulemaking under § 112(i)(5), EPA conceded that "exposure levels *one order of magnitude higher than the reference concentration or dose*" were required before estimating "a level [of exposure] at which public health risks could be potentially significant."[11] Nevertheless, in its December 2000 listing decision, EPA used the RfD for methylmercury as if it provided an absolute threshold for health risk, using it as an important factor in two key "factual findings": (1) the existence of fish advisories in many states; and (2) the number of women of child bearing age predicted to have methylmercury exposures above the reference dose.

2. Scientific Evidence Does Not Support a Conclusion that Mercury Emissions from Coal-Fired Power Plants Pose a Risk to Public Health.

The bases for EPA's 2000 listing decision do not support a conclusion that mercury emissions from coal-fired power plants pose a risk to public health. In its Mercury Study to Congress, EPA concluded that a "plausible link between anthropogenic releases of mercury from industrial and combustion sources in the United States and methylmercury in fish" exists.[12] In that same report, however, EPA was quick to add that methylmercury concentrations in fish also

[9] 55 Fed. Reg. 39321 (Sept. 26, 1990).

[10] 59 Fed. Reg. 42250 (Aug. 17, 1994). EPA has also noted that "[b]y definition, RfC analyses do not yield a precise concentration that defines a demarcation between safety and hazard . . . the RfC is a protective level, not a predictive one." *Id.* EPA added "at present, it is impossible to state whether projected exposures above the RfC would result in an adverse health effect for either an individual or the general population." *Id.*

[11] 56 Fed. Reg. 27363 (June 13, 1991) (emphasis in original).

[12] Mercury Study Report to Congress, Vol. 1, at O-2 (Dec. 1997).

result from existing background concentrations of mercury and from deposition of mercury from the global pool.[13] EPA then found that "[g]iven the current scientific understanding of the environmental fate and transport of [mercury], it is not possible to quantify how much of the methylmercury in fish consumed by the U.S. population is contributed by U.S. emissions relative to other sources of mercury."[14] Furthermore, EPA recognized that it could not assume that a change in mercury emissions from coal-fired power plants would result in a linear change of methylmercury levels in fish or even over what time those changes would occur.[15]

EPA's "plausible link" conclusion is insufficient to justify regulation.[16] Section 112(n)(1)(A) requires EPA to determine if further regulation of power plants is "appropriate and necessary" to protect public health. EPA's admitted inability to quantify the linkage between mercury emissions from power plants and mercury levels in fish prevents it from concluding that regulation is either appropriate or necessary.[17] In addition, scientific evidence shows that EPA's

---

[13] *Id*.

[14] *Id*. In subsequent documents EPA has repeated that it cannot quantify the linkage between mercury emissions from coal-fired power plants and methylmercury levels in fish. *See* 65 Fed. Reg. at 79827; 69 Fed. Reg. at 4656 (noting there is only a "plausible link" between mercury content in fish and mercury emissions from coal-fired units).

[15] Mercury Study Report to Congress at O-2.

[16] "Plausible" is defined as "1: superficially fair, reasonable, or valuable but often specious; 2: superficially pleasing or persuasive; and 3: appearing worthy of belief." Webster's New Collegiate Dictionary (1977). Clearly, a linkage should be more than superficial it is to be used as the basis for a regulatory program.

[17] A hypothetical link between utility emissions and fish mercury levels does not satisfy this obligation. Rather, EPA must provide a "more than theoretical basis" for a showing that a source exposes the public to a level of a pollutant that is sufficient to cause an "unreasonable risk of injury to health." *Chemical Mfrs. Ass'n v. EPA*, 859 F.2d 977, 988 (D.C. Cir. 1988); *see also* H.R. Rep. No. 95-294, at 3, 48-49 (1977) (adopting endangerment as "the standard which the Administrator must meet *before* promulgating regulations controlling the emissions of any pollutant") (emphasis added); *Ethyl Corp. v. EPA*, 541 F.2d 1, 12, 16, 31-32 (1976) (the "will

(continued…)

"plausible link" is in fact a far too simplistic depiction of mercury in the environment. For example, there is no basis to assume that a given percentage reduction in mercury emissions from coal-fired plants will result in an equivalent reduction in mercury levels in fish. Indeed, detailed modeling studies performed by the Electric Power Research Institute ("EPRI") demonstrate that less than 8% of the mercury deposited in the United States comes from coal-fired power plants.[18] If coal-fired power plants reduced their ionic mercury emissions (the water-soluble form of mercury that tends to deposit closer to sources) by 10%, mercury deposition in the United States would decrease by only 0.75%. If coal-fired power plants reduced elemental mercury emissions (the non-water-soluble form of mercury that tends to join the global circulation) by 10%, mercury deposition in the United States would be reduced by only 0.03%. Importantly, EPRI's 8% estimate may still overstate the mercury deposition attributable to coal-fired power plant emissions because it likely does not account for all of the atmospheric conversion of ionic mercury to elemental mercury.

In fact, recent scientific studies suggest a rapid chemical conversion of ionic mercury to elemental mercury in coal-fired power plant plumes. Reliable measurements made as part of the Southeastern Aerosol Research and Characterization ("SEARCH") program of speciated mercury in plumes that have traveled some 10-25 kilometers downwind from coal-fired power plants have shown substantially lower ratios of ionic to elemental mercury than what is expected to be emitted based on either event-specific coal measurements or the algorithms developed by

---

endanger" language has been interpreted to require a finding of "significant risk of harm to the public health").

[18] EPRI, "A Framework for Assessing the Cost-Effectiveness of Electric Power Sector Mercury Control Policies," at 2-6 (May 2003).

EPRI using EPA's 1999 information collection request ("ICR") data.[19] Losses of ionic mercury during plume travel have been ruled out through several lines of evidence (such as no rain during events, mass balance between emissions and observations, etc.), leaving only the existence of a chemical reduction mechanism between the plant and the ambient measurement site, or errors in speciated emissions estimates to account for the greater than expected elemental mercury levels (both of which would lead to the same policy result of limited local deposition or an even faster conversion).

Attempts to replicate the measured mercury levels associated with the plume events that show reduction between the plant and the downwind site with existing plume models have failed.[20] This suggests that the mercury chemistry assumed in these models is not correct. If the models are modified to allow more rapid conversion of ionic mercury to elemental mercury, model performance improves. For example, current models overestimate mercury deposition downwind of the Ohio River Valley (the so-called "Pennsylvania anomaly"). If models are modified to take the reduction mechanism into account, the estimates of deposition improve when compared to real-world deposition data from the Mercury Deposition Network. Also, if this modification is made, deposition predictions in places where the model already predicts deposition well (such as Wisconsin) do not degrade.[21] In addition, dilution chamber tests on

---

[19] Edgerton, "Comments on Mercury Speciation in Coal-Fired Power Plant Plumes" (June 8, 2004) (Attachment 1 to these comments).

[20] Lohman, C., Seigneur, C., and Jansen, J., "Modeling Mercury Transformation in Power Plant Plumes," abstract submitted for 7th International Conference on Mercury as a Global Pollutant, Ljubjana, Slovenia (June 2004).

[21] Seigneur, C., Vijayaraghavan, K., Lohman, K., Karamchandani, P., and Scott, C., "Global source attribution for mercury deposition in the United States," *Environ. Sci. Technol.*, Vol. 38, at 555-69 (2004).

several coal-fired power plant stacks and an incinerator have been conducted, and the ratios in the chamber (after dilution) showed lower ionic to elemental ratios when compared with speciated stack measurements.[22] Finally, aircraft measurements in coal-fired power plant plumes have produced similar results.[23]

Furthermore, EPA's conclusion that coal-fired power plants are the largest source of mercury emissions in the U.S. does not warrant a finding that regulation is appropriate and necessary under § 112(n)(1)(A). That coal-fired power plants may be the largest current source of anthropogenic mercury emissions in the United States does not support the legally required conclusion under § 112(n)(1)(A) that those emissions pose significant risks to the public health.

The combustion of coal to produce electricity is one of the largest industrial activities in the United States. There are more than 1100 coal-fired electric utility steam generating units operating in the United States, which collectively burned over 1006.5 million short tons of coal in 2003.[24] As a result, even minute concentrations of a chemical in stack emissions can produce seemingly large total emission estimates when individual plant emissions are summed across 1100 units nationwide. For example, EPA's municipal waste combustor standard (Subpart Eb) limits mercury emissions to 80 Mg/m^3. This limit for incinerators is higher than the current emissions from any coal-fired power plant. Assuming 7% O_2, 1 Mg/m^3 converts to 0.92 lb/TBtu. This equates to a 73.6 lb/TBtu limit for municipal waste incinerators, which is an order of magnitude higher than the MACT limits EPA proposes for electric utility steam generating units.

---

[22] EPRI Comments on EPA Proposed Emission Standards/Proposed Standards of Performance, Electric Utility Steam Generating Units: Mercury Emissions (June 16, 2004).

[23] *Id.*

[24] Fred Freme, "U.S. Coal Supply and Demand; 2003 Review," 1 (2004), *available at* www.eia.doe.gov/cneaf/ceal/page/special/feature.html.

Moreover, it is important to note that modeling by EPRI has demonstrated that mercury must be studied and understood on a global, rather than a nationwide or local, scale. About 70% of mercury that deposits in the United States comes from natural or foreign sources. EPRI's analysis of the ICR data show that over 56% of the mercury emitted from coal-fired power plants is in the elemental form. Elemental mercury enters the global pool and circulates in the environment for up to a year or more. Notably, it does not deposit near the power plants from which it is emitted. In addition, the scientific information discussed above suggests strongly that significant amounts of the gaseous ionic mercury emitted by coal-fired power plants is converted to elemental mercury shortly after exiting the stack, and this converted mercury also enters the global pool. EPRI's modeling work shows that even if mercury emissions from coal-fired power plants were reduced by 70%, mercury deposition in the United States would change only by about 7%.

Although some small portion of the mercury emitted by coal-fired power plants deposits in the United States, not all of that mercury finds its way into humans. Only one mercury compound -- methylmercury -- is the focus of EPA's human health concerns. Methylmercury is not emitted from any coal-fired power plants. Mercury emissions from power plants are converted to methylmercury only when the mercury finds its way into a waterbody that can methylate and accumulate the deposited mercury -- and only a fraction of the mercury that enters waterbodies undergoes conversion. Even if this occurs, it can take years for methylmercury to work its way up through the food chain before finding its way to humans.

In the December 2000 listing decision and the preamble to its proposed rule, EPA cites the existence of fish advisories for methylmercury in 40 states as evidence that mercury presents a human health concern in the United States. Fish advisories are based on the total mercury

loadings in a given waterbody. No distinction is made among the sources of mercury entering the waterbody or whether the mercury in the waterbody came from historical sources. It is illogical to conclude that fish advisories result from the mercury emissions of coal-fired power plants.

States also do not use a common methodology in developing fish advisories. Some states use EPA's RfD, others use the WHO RfD, and still others use their own unique methods. In addition, states use varying assumptions regarding the frequency with which humans consume fish, the average portion size of a fish meal, and the body weight of various population groups. Also, methods for measuring mercury levels in fish are not uniform. In some states, a small number of fish measurements will trigger a fish advisory. As a result, all fish advisories may show is that the levels of a chemical in certain fish are at or above certain thresholds. Fish advisories do *not* establish that a health risk exists. Indeed, the primary purpose of fish advisories is to warn the public about undue consumption of fish from given waterbodies in an effort to change behavior patterns and avoid potential health issues. The mere existence of fish advisories does not equate to a public health risk attributable to mercury emissions from coal-fired power plants.

In its rulemaking proposal, EPA relies on the CDC's recent assessment of mercury concentrations in the blood of over 1500 women of childbearing age (the NHANES study). Analyses of these data show that about 8% of these women have blood mercury levels that are at or above EPA's RfD and that most of those women have blood mercury levels barely above the

RfD threshold.[25] The woman with the highest blood mercury concentration had only about one-half the BMD level -- the level at which very subtle health effects have actually been measured. EPA derived the RfD for mercury by dividing the BMD by an "uncertainty factor" of ten. Therefore, the reason that 8% of the women have blood levels above the RfD is entirely a function of the very conservative uncertainty factor that EPA used in setting the RfD for methylmercury. By contrast, if EPA had set the RfD at the same level as the WHO's suggested exposure level, then less than 2% of the women tested would have blood concentrations above the RfD, and if the ATSDR's recommended value was used, the number would be well under 1%.[26]

[25] 69 Fed. Reg. at 4658. In various forums, this 8% value has been translated into an estimate of 300,000 children born in the United States who may be at risk as a result of their mothers' blood levels being above the EPA RfD.

More recently, the press has reported a value of 600,000 women exposed at levels above the RfD, and this figure has been repeated in comments submitted to EPA in this rulemaking docket. This value comes from the remarks of an EPA scientist at the 2004 National Forum on Contamination in Fish in San Diego on January 27, 2004. This statement can only be properly viewed as the opinion of an individual scientist; it cannot be ascribed to EPA because EPA has not modified the RfD published on its Integrated Risk Information System ("IRIS") database or noticed an intent to do so. In fact, this highlights the problems and misuse of EPA's RfDs -- namely, that because EPA's RfDs are not subject to formal notice and comment proceedings, comments by a single EPA scientist can be misinterpreted to suggest that EPA has revised its RfD.

Indeed, EPA expressly considered the cord blood to maternal blood ratio that is the basis for the EPA scientist's claim when it set the current RfD for methylmercury. The IRIS documentation reveals EPA decision not to adjust the ratio but instead to include uncertainties about the relationship in the overall uncertainty factor. *See* IRIS Database, Methylmercury, Section I.A.3, Uncertainty and Modifying Factors. If one were to accept the EPA's scientist's view as correct, the uncertainty factor for the RfD would need to be reduced by a similar factor. No basis exists for the 600,000 figure.

[26] EPRI, "A Framework for Assessing the Cost-Effectiveness of Electric Power Sector Mercury Control Policies," at D-3 (May 2003).

In analyzing the NHANES results, EPA cannot use a simple comparison of those results to EPA's RfD as a valid measure of the current risk to the public health. The NHANES results must be considered in the context of the RfD definition[27] and EPA's development of its mercury RfD, including the conservative assumptions already mentioned, the significance of the psychological test scores used to find "effects,"[28] and the large uncertainty factors incorporated within the RfD. When viewed properly, the NHANES data do not demonstrate the level of public health risk that EPA characterizes. Furthermore, EPA cannot simply use speculation about the role of power plant mercury emissions as a basis for determining that regulation of all coal-fired power plants is warranted.

In fact, in the preamble to the proposed rule, the vast majority of EPA's assessment of the predicted benefits from the proposed mercury rule focuses on health benefits that will result from reducing emissions of sulfur dioxide ("SO_2") and nitrogen oxides ("NOx") -- not mercury.[29] In addressing health benefits that will result from reductions in mercury emissions, EPA states that "the Agency believes that the key rationale for controlling [mercury] is to reduce public and environmental exposure to [mercury], thereby reducing risk to public health and wildlife.

---

[27] EPA defines the RfD as "an estimate (with uncertainty spanning perhaps an order of magnitude) of a daily oral exposure to the human population (including sensitive subgroups) that is likely to be without appreciable risk of deleterious effects during a lifetime." EPA, Glossary of IRIS Terms, *available at* http://www.epa.gov/iris/gloss8.htm#r. EPA's apparent conclusion that exposures above the RfD represent risks to the public health reflects fallacious logic.

[28] EPRI's analysis of the test data used to develop the RfD demonstrates that "there is essentially no discernable adverse neurobehavioral effect for *in utero* exposure at the RfD or at 3.8 times the RfD," and that "[t]his conclusion renders use of the term 'children at risk' essentially meaningless in this context." EPRI Comments on EPA Proposed Emission Standards/Proposed Standards of Performance, Electric Utility Steam Generating Units: Mercury Emissions, at 27 (June 16, 2004).

[29] 69 Fed. Reg. at 4707-12.

Although the available science does not support quantification of these benefits at this time, the Agency believes the qualitative benefits are large enough to justify substantial investment in [mercury] emission reductions."[30] As discussed above, EPA's mischaracterization of the availability of scientific information that can support quantification and EPA's speculation about the possible benefits from the control of mercury emissions from coal-fired power plants are not borne out by the detailed analyses performed by EPRI.

In May 2003, EPRI published a technical report analyzing the cost effectiveness of the proposed Clear Skies legislation and a hypothetical MACT standard.[31] EPRI used a model that simulates electric system operation and decision making to predict how utilities would act to comply with the two regulatory structures. An atmospheric fate and transport model was then used to predict how the resulting changes in mercury emissions would affect a number of receptors in specific source regions. The change in methylmercury exposure to women of childbearing age was then estimated using the deposition information[32] and compared to the estimated costs of each regulatory scheme.

EPRI analyses show that significant reductions in mercury emissions will result in very little change in human exposures in the U.S. EPRI found that mercury emissions from coal-fired power plants contributed less than 8% of the mercury deposited in the United States. A 10% reduction in national ionic mercury emissions from coal-fired power plants would result in a

[30] *Id.* at 4711 (emphasis added).

[31] EPRI, "A Framework for Assessing the Cost-Effectiveness of Electric Power Sector Mercury Control Policies" (May 2003).

[32] EPRI assumed no time lag existed between emission reductions from coal-fired power plants and changes in the level of methylmercury in fish consumed by humans. This simplifying assumption overstates the end effect of any mercury reduction.

0.75% reduction in U.S. mercury deposition; a 10% reduction in national elemental mercury emissions would lower U.S. mercury deposition by 0.03%.[33] As a result, if coal-fired power plants reduce their mercury emissions to 15 tons per year, the reduction of mercury deposition in the U.S. would be only about 1.5%, which would have little effect on the exposures of women of childbearing age.[34] The incremental exposure reductions that EPA's proposed mercury program provides over those resulting from the co-benefits of SO_2 and NOx controls under EPA's CAIR proposal are extremely small. The incremental mercury exposure reduction for women of childbearing age -- the population subgroup that EPA used as a basis to justify its listing decision -- would be only 0.5%. Similarly, the incremental decrease in the fraction of the population predicted to be above EPA's RfD would be reduced by 0.064%. Because, as noted above, the NHANES data show that most of the women exposed above the RfD are barely above the RfD threshold, the small predicted percentage reduction in the population above the RfD reinforces the conclusion that significant reductions in mercury emissions from coal-fired power plants will yield minimal health benefits.

For the foregoing reasons, this rulemaking record does not contain sufficient factual evidence to conclude that mercury emissions from coal-fired power plants present a public health concern. EPA does not have legal authority under § 112(n)(1)(A) of the Clean Air Act to regulate mercury emissions until such a factual showing exists.

---

[33] EPRI, "A Framework for Assessing the Cost-Effectiveness of Electric Power Sector Mercury Control Policies," at 2-6 (May 2003).

[34] EPRI Comments on EPA Proposed Emission Standards/Proposed Standards of Performance, Electric Utility Steam Generating Units: Mercury Emissions, at 15 (June 16, 2004). Reduction in mercury deposition would never be more than 6.5% in some states. *Id.*

II. EPA's MACT Proposal for Coal-Fired Units

As discussed above, Southern believes that the available scientific evidence does not support a decision to regulate mercury emissions from coal-fired power plants. If EPA nevertheless decides to regulate mercury emissions, Southern supports EPA's proposed cap-and-trade option. Nonetheless, Southern feels compelled to offer comments on the MACT portion of EPA's proposal. As these comments note, however, the MACT regulatory scheme is entirely inappropriate for coal-fired power plant mercury emissions and should not be used.

A. EPA Correctly Decided To Subcategorize Electric Utility Steam Generating Units.

If EPA decides to adopt the MACT approach, Southern supports EPA's decision to divide the category of electric utility steam generating units into a number of subcategories. EPA's legal authority to create subcategories is clear in § 112. Section 112(d)(1) provides EPA discretion to distinguish "among classes, types, and sizes of sources within a category or subcategory in establishing standards." Section 112(c)(1) adds that "[t]o the extent practicable, the categories and subcategories listed under this subsection shall be consistent with the list of source categories established pursuant to section 7411 of this title and part C of this subchapter."

EPA also has legal authority to create subcategories under § 111. EPA has previously subcategorized coal-fired power plants under § 111 based on the sulfur levels in the coals they burn.[35] The U.S. Court of Appeals for the D.C. Circuit approved this subcategorization approach in *Sierra Club v. Costle*.[36] In approving EPA's new source performance standards ("NSPS") regulations, the court recognized that § 111 allowed EPA "to distinguish among classes, types

[35] 40 C.F.R. § 60.43a

[36] 657 F.2d 298 (D.C. Cir. 1981)

and sizes within categories."[37] The court explained that "[o]n the basis of this language alone, it would seem presumptively reasonable for EPA to set different percentage reduction standards for utility plants that burn coal of varying sulfur content."[38] Thus, the court found that EPA could create subcategories based on the type of fuel a unit burns.

EPA should place oil-fired units in a different subcategory than coal-fired units. EPA's Utility Report clearly demonstrates that the emissions from coal- and oil-fired power plants differ markedly. These differences result from the amount and form of trace substances in each fuel as well as the compounds created during the combustion process.

Similarly, differences between coal ranks (e.g., bituminous, subbituminous, and lignite coals) warrant further subcategorization of electric utility steam generating units. The burning of different coals at power plants produces different amounts and forms of mercury (different mercury species). These differences are particularly pronounced for plants burning different coal ranks. EPA must establish different mercury control standards for different coal ranks because the different species of mercury emitted by burning the various coal ranks dictate the level of control that can be achieved. For example, the burning of subbituminous coals seems to result in more elemental mercury emissions, which are more difficult to capture in conventional (selective catalytic reduction ("SCR")/scrubber combination) pollution control equipment. The differences in emission characteristics between coals of different rank show that EPA should establish different MACT limits for each coal rank.

[37] *Id.* at 318.

[38] *Id.*

Because fluidized bed combustion units ("FBCs") use fundamentally different processes than conventional boilers,[39] Southern believes EPA should place them in their own subcategories. FBCs combust relatively large coal particles in a bed of sorbent or inert material. FBCs operate at lower temperatures than conventional boilers and have much longer fuel residence times. The design, construction, and operation of FBCs differ from conventional boilers. Indeed, the largest FBC has a nameplate capacity of about 300 megawatts while the largest conventional boiler have nameplate capacities of around 1200 megawatts.

Despite the fact that EPA recognizes these fundamental differences between FBCs and conventional boilers in the proposed rule,[40] EPA has not proposed to create a separate subcategory for fluidized bed units for either existing or new units. EPA reaches this conclusion because it has found that "the Hg emissions test results for FBC units were not substantially different from those at similarly-fueled conventional-fired units."[41] Although this logic may make sense for existing units, it does not hold for new units. For existing units, EPA must set MACT floors based on the best performing 12% of all units in the category. Thus, existing source MACT floors represent an average of the performance of a number of units, meaning that differences among units are less important, particularly where the performance of certain units are similar. By contrast, §112(d)(3) requires that new source MACT limits "shall not be less stringent than the emissions control that is achieved in practice by the best controlled similar source." This subsection focuses on a single source, not a group of sources. As explained

[39] Conventional boilers burn pulverized coal and use burners that are positioned in the lower to middle sections of the furnace. Burner types include wall-fired, tangentially-fired, and cyclone.

[40] *See* 69 Fed. Reg. at 4666.

[41] *Id.*

above, FBCs are not "similar" to conventional boilers. Thus, for new units, EPA should add a separate subcategory for FBCs.

With regard to integrated gasification combined cycle ("IGCC") units, Southern opposes including these units in a rulemaking for "electric steam generating units" because these units differ so fundamentally from electric steam generating units. IGCC units are an emerging technology consisting of two distinct parts: a gasifier and a combined cycle unit. IGCCs do not burn coal in its solid form; rather, the coal is converted to a combustible gas that is then burned in a gas turbine. The synthetic gas is cleaned and conditioned before being burned in the gas turbine. Because IGCCs have totally different processes, they should not be included in this rulemaking. If EPA decides, however, to include IGCCs, Southern agrees with EPA's proposal to create a separate subcategory for these units.

Southern believes that EPA should not place units burning coals of more than one rank in a separate subcategory. Large differences exist in the way plants burn coals of more than one rank. Some plants alternate between burning coals of one rank and then another, while others blend the two coal ranks and burn them at the same time. The composition of coal blends vary over a broad range. Some units burn large percentages of bituminous coal with small amounts of subbituminous; others burn an almost 50:50 blend; while still others burn predominantly subbituminous coal with a little bituminous. These differences argue against a separate subcategory for these units. Rather, EPA should require that coal plants that burn a blend of coals comply with a weighted-average MACT limit based on the proportions of the different ranks of coal that are burned at those facilities.

B. MACT Floors

If EPA chooses to adopt a MACT approach, then Southern generally supports the MACT floors EPA has proposed for existing sources. Southern has a concern, however, that EPA did

not include the percentage reduction option supported by the electric utility industry during EPA's Utility MACT Working Group meetings. Further, EPA's proposed new source MACT limits are unacceptably low and fail to account for all sources of variability. If the new source MACT limits remain as proposed, they will effectively exclude the use of most coals in the United States and make the construction of new coal-fired units difficult, if not impossible.

1. The Proposed Existing Source MACT Floors

EPA's proposed MACT floors are based on data collected as part of EPA's 1999 ICR to electric utility steam generating units. These data have limitations. EPA's ICR required all facilities to sample and analyze every sixth shipment of coal for mercury content and a number of other properties. In addition, approximately 80 plants were required to conduct mercury sampling in the stack as well as before the last control device. Stack sampling was required over a two- or three-day period using the Ontario Hydro sampling method to provide mercury speciation information. Previous EPRI and U.S. Department of Energy ("DOE") sampling efforts had shown that the Ontario Hydro method was the best available method for obtaining mercury speciation results, but that the method was difficult to use, even by experienced sampling crews.

The limitations of the ICR tests become apparent when one examines the results. The results reveal: (1) large differences among the results of the two or three Ontario Hydro tests at a given facility; (2) large differences in results between plants having the same boiler configurations and control equipment; (3) negative removal efficiencies in more than 25% of the ICR tests;[42] and (4) questionable mercury data at the inlet of the last control device because of

[42] A negative removal efficiency results when the amount of mercury in the stack exceeds the amount of mercury in the coal.

imperfect sampling locations and large amounts of particulate matter in the gas stream. As a result, while the ICR data may be more extensive than other data sets EPA has used to set MACT floors, important limitations exist, and the data cannot be used, without adjustments, in setting floors. In particular, the ICR data provide a snapshot of a plant's operation, showing the level of mercury control accomplished during two or three days of operation at a given facility. They do not provide any information about the performance of a given unit over long periods of time burning different coals.[43]

Analyses presented by EPRI and UARG at meetings of EPA's Utility MACT Working Group showed that mercury emissions from the best performing units could vary by more than an order of magnitude throughout the year. The analyses also confirmed the random nature of the ICR results. For some of the "best performing" units, the ICR testing did not take place on a "normal" day; instead, testing occurred on one of that unit's best days of mercury emissions. For other units that one would not place among the top 12% based on ICR results, the cumulative distributions show they were tested on days when mercury emissions were higher than normal.

The MACT floors for coal-fired electric utility generating units must, therefore, not be based on the "snapshot" that the ICR data provides; they must account for the large variability in mercury emissions that occurs at coal-fired units. There are a number of ways to adjust the ICR data to account for these sources of variability. In the proposed rule EPA has offered one approach[44] and discusses another offered by DOE.[45] During EPA's Utility MACT Working

[43] Most coal-fired power plants do not burn coal from a single source. Many plants burn coal that is purchased on the spot market. Plants could burn coal coming from 10 or more different sources.

[44] Memorandum from William H. Maxwell to the Utility MACT Project Files, "Analysis of variability in determining MACT floor for coal-fired electric utility steam generating units" (Nov. 26, 2003).

Group meetings, UARG and WEST Associates also offered two other approaches for addressing variability. Each of these approaches presents a valid way to address variability; each method has some advantages and disadvantages when compared to the others.[46]

In general, the four different variability approaches produce similar MACT floors for the different coal ranks. If promulgated, each would reduce total mercury emissions from coal-fired power plants from 48 tons per year to around 30 to 34 tons per year. This level of mercury emissions under the MACT provisions makes practical sense when one considers the species of mercury currently emitted from coal-fired power plants. An analysis of the ICR data using the EPRI correlation factors estimates that coal-fired power plants emitted 45.6 tons of mercury in 1999, of which 26.7 tons were elemental mercury. EPA similarly estimates that mercury emissions from coal-fired power plants were 48 tons in 1999, with 26.1 tons being in the form of elemental mercury.[47] Existing control technologies, at even the best controlled plants, do not capture elemental mercury to any appreciable degree, which means that one can view 26 tons of elemental mercury as the maximum emission reduction possible using existing control equipment. The best controlled plants do not capture 100% of all non-elemental forms of mercury, however. Therefore, if one conservatively assumes that the best controlled units will

---

[45] L. D. Carter, U.S. DOE, "Incorporating Variability in Setting MACT Floors" (Dec. 9, 2003).

[46] RMB Consulting & Research, Inc., "Technical Review Comments on EPA's 'Proposed National Emission Standards for Hazardous Air Pollutant; and in the Alternative, Proposed Standards of Performance for New and Existing Stationary Sources: Electric Utility Steam Generating Units' and 'Supplemental Notice for the Proposed National Emission Standards for Hazardous Air Pollutant; and in the Alternative, Proposed Standards of Performance for New and Existing Stationary Sources: Electric Utility Steam Generating Units'" (hereinafter "RMB Technical Review Comments") (June 25, 2004) (Attachment 6 to UARG's Comments).

[47] *See* 69 Fed. Reg. at 4691; *see also* "Emissions of mercury by state," *available at* http://www.epa.gov/hn/atw/combust/utittox/stxstate2.pdf.

capture 90% of the non-elemental forms of mercury, then coal-fired power plants would produce an estimated 4.9 tons of non-elemental mercury. This indicates that any MACT floor should not be more stringent than around 31 tons annually (26 tons of elemental mercury plus 4.9 tons of non-elemental mercury). Moreover, if one assumes 80% control of non-elemental forms of mercury, then the MACT floor increases to 36.5 tons.

As recommended by the majority of industry participants in the Utility MACT Working Group meetings, Southern believes that any MACT floor should provide a unit the option of choosing between alternative standards based on either a stack limit or a percentage reduction. An alternative standard is needed to address the wide variations in mercury levels in coal. Providing an alternative standard avoids inequities based on the mercury content of coal burned and is consistent with EPA's stated desire to not favor certain fuels over others.

Southern supports the MACT floor limits offered during the EPA Utility MACT Working Group meetings by the majority of industry participants because those limits are reasonable and address the variability in mercury emissions from coal-fired power plants. Southern urges EPA to use those limits if it moves forward with promulgating a final MACT rule.

2. New Source MACT Limits

EPA's proposed new source MACT limits fail to account for all sources of variability and, as a result, are set far too low. Indeed, if left unchanged, it will be difficult -- if not impossible -- to construct a new coal-fired power plant in the United States. There are two reasons why EPA has set the new source MACT limits too low: (1) EPA based its new source limits on units that are not "similar" to most new coal-fired units (i.e., FBCs); and (2) EPA failed to account for the range of coals a new unit may burn.[48] Section 112(d)(3) of the CAA requires

[48] *See* RMB Technical Review Comments.

MACT floors for new units to reflect "[t]he maximum degree of reduction in emissions that is deemed achievable for new sources in a category or subcategory[, which] shall not be less stringent than the emission control that is achieved in practice by the best controlled similar source." The U.S. Court of Appeals for the D.C. Circuit has interpreted this language to require EPA to ensure that the MACT floor is achievable "under the most adverse circumstances which can reasonably be expected to occur."[49] Therefore, the new source MACT floor must reflect how the best controlled similar source would perform under the worst reasonably foreseeable circumstances, including using a variety of different fuels. Clearly, as discussed above, FBCs are not "similar" sources, and even if EPA uses a conventional pulverized coal-fired power plant to set the new source MACT, it must include an analysis of how it would perform using a range of coals.

EPA proposes a new source MACT limit for bituminous coal units of 0.6 pounds per trillion British thermal units ("lb/TBtu"). Even if a new unit could achieve 90% control over mercury emissions, which EPA says is not currently practicable,[50] that new plant could not burn coal with a mercury concentration above 6.0 lb/TBtu and still meet the new source limit for bituminous coals. Only 37.8% of the bituminous coals sampled during the 1999 ICR had concentrations at 6.0 lb/TBtu or below. If one instead assumes that the new unit could achieve 80% mercury emissions control consistently, then bituminous coal above 3.0 lb/TBtu could not be burned. Only 8.3% of the 1999 bituminous coal samples were at or below 3.0 lb/TBtu.[51] The practical effect of EPA's proposed new source MACT limits is that it will be virtually impossible

[49] *National Lime Ass'n v. EPA*, 627 F.2d 416, 431 n.46 (D.C. Cir. 1980).

[50] *See* 69 Fed. Reg. at 4667; *see also* 69 Fed. Reg. at 12403.

[51] Similar results occur under EPA's proposed MACT limits for subbituminous and lignite units.

to construct a new coal-fired unit in the United States. Even if a new coal-fired unit could be built by burning coal from only limited coal sources, substantial compliance questions exist about how it could comply with EPA's proposed new source limits. Several new coal-fired units are in the process of seeking operating permits. These units have contacted equipment vendors seeking guarantees that given control equipment will achieve certain levels of mercury control. To date, the vendors have either refused to offer guarantees stating, for example, that the goal of their mercury control technology is 90% but that the technology is not mature enough to allow the company to commit to such a guarantee, or have offered guarantees of control levels of up to 80% and then offering these guarantees only as to the ionic forms of mercury. In addition, given the substantial compliance questions that exist about how new units will comply with EPA's new source limits, financial institutions have shown a reluctance to provide financing for these units. Therefore, EPA's new source MACT limits for coal-fired boilers are too low and must be revised.

As stated above, Southern opposes including IGCC units in this rulemaking because those units are new and differ substantially from "electric utility steam generating units." If EPA persists, however, in including IGCC's in this rulemaking, it must revise its treatment of IGCCs. EPA's proposal could result in excluding this promising new, more efficient technology. EPA's new source MACT limit for IGCC units specifies a 90% reduction based on an assumption that all new units will include a carbon bed between the gasifier and turbine.[52] EPA bases this 90% assumption on very limited data, and it is not clear whether 90% control can be achieved over the long term. In addition, high removal efficiencies by a carbon bed are highly dependent on the

[52] *See* proposed 40 C.F.R. § 63.9990(b); 69 Fed. Reg. at 4679.

temperature of the manufactured gas entering the bed. As temperatures increase, the mercury removal efficiency of the bed falls.

IGCC is a developing technology, and Southern is exploring a new, more efficient application of IGCC that does not cool the gas exiting the gasifier. Southern Company and DOE are testing alternative ways of removing mercury from hot IGCC gases; however, it is premature to assume that all new units can achieve 90% mercury control. Such a stricture may exclude this promising new technology that is more efficient and less carbon-intensive than other IGCCs. EPA should defer any decision on a MACT for IGCCs until the technology has been more fully developed.

C. EPA Correctly Determined that Available Technologies or Work Processes Do Not Provide a Viable Basis for Establishing Standards Beyond the MACT Floors.

Southern supports EPA's decision not to change the MACT floors as a result of its beyond-the-floor analyses.[53] In the preambles to the proposed rule and supplemental notice, EPA provides detailed discussions about the status of mercury control technologies and why it is premature to assume that 90% control of mercury emissions is currently achievable.[54] Southern agrees that 90% control of mercury emissions cannot be achieved with any currently available technologies.[55]

[53] *See* 69 Fed. Reg. at 4675.

[54] *See id.* at 4679-80; 69 Fed. Reg. at 12402-03.

[55] *See* J.E. Cichanowicz, "Assumptions Adopted by EPA Proposal Regarding the Feasibility of Mercury Controls for MACT Application" (June 29, 2004) (Attachment 8 to UARG's Comments).

EPA must distinguish between mercury control technologies that are commercially available and those that are in various stages of development.[56] To be deemed commercially available, a technology must first have the ability to control mercury emissions from plants burning different coal ranks and having different boiler types. Beyond this, a few isolated tests or demonstrations do not support a conclusion that a technology is commercially available. A technology must be installed in full-scale applications at a number of sites and operated over extended periods of time before it can be viewed as commercially available. A technology cannot be considered commercially available just because a vendor is willing to sell it. Commercial availability requires that most of the key engineering questions about the technology have been previously resolved. EPA cannot consider a technology to be commercially available where many problems will need to be solved as experience is gained with the technology -- that is the definition of a prototype unit, not a commercially available one. As was demonstrated in the blackout of 2003, the nation's electricity supply is crucial to our security and economic well-being, and EPA must be careful not to deem a technology commercially available until it is certain that it will not threaten the reliability of the electricity supply.

Activated carbon injection ("ACI") is not a commercially available technology. Although bench, pilot, and full scale tests have identified a number of the key variables associated with this technology, very limited full-scale testing of this technology exists to date. The four full-scale ACI tests were all of very limited duration and were conducted at units that are not representative of most coal-fired units. These tests produced wide variations in mercury

[56] *See* Larry S. Monroe, "Commercialization of Emission Control Technologies in the U.S. Utility Industry, with a particular focus on mercury controls," at 8 (June 28, 2004) (stating that only two mercury control technologies are mature enough even to be considered to be in the Testing and Validation phase, and none of them can be considered commercially available at this time) (Attachment 2 to these comments).

control. Thus, while some ACI results are promising, many questions remain about the variable results and the performance of the technology over the long term. ACI is not a commercially available technology and cannot serve as the basis for beyond-the-floor limits.[57]

A number of other sorbents have been offered as possible alternatives to activated carbon. Although these sorbents offer the possibility of improved mercury capture, none has been demonstrated at full scale to remove mercury with acceptable balance-of-plant impacts. Many questions remain about the effectiveness, availability, and cost of these sorbents. Additionally, the unintended environmental consequences of using some of these alternative sorbents has not been fully evaluated, particularly the brominated and iodated activated carbons.

SCR units have also been offered as a possible way to enhance the mercury removal efficiency of flue gas desulfurization (FGD) equipment. In theory, SCR units oxidize elemental mercury and these oxidized forms of mercury are then removed by FGDs. Limited mercury testing has occurred on units equipped with SCRs and FGDs, and the results of those tests are inconclusive.[58] Although SCRs have been shown to increase the amount of oxidized mercury in the flue gas at some bituminous coal plants, those amounts have changed over time, raising questions about how factors like catalyst age, space velocities, and the volume of catalyst and other compounds in the flue gas affect elemental mercury conversion. Tests on SCR-equipped units burning subbituminous coals have shown less elemental mercury conversion than bituminous units and very rapid declines in mercury oxidation as the catalyst ages. No SCR tests have been performed on lignite units, so it is impossible to assess the performance of SCR on

[57] *Id.* at 6.

[58] *See* EPRI, "Impact of NOx Controls on Mercury Controllability," EPRI Report No. 1007221 (July 2002).

those units. SCR research remains a work in progress.[59] Until questions about the effectiveness of SCR units are answered, they should not form the basis for beyond-the-floor limits.[60]

D. Form of Standard

As noted above, Southern believes that any MACT-based limit should be in the form of an alternative standard that allows a unit the choice of complying with either a stack limit or a percentage reduction limit. An alternative standard is the best way to account for the differences in the mercury content in the various coal ranks and to ensure that certain coal seams are not favored over others.

EPA should allow measurements to demonstrate compliance with a percentage reduction limit to be made before and after control devices, which would avoid the need to sample coal. For new bituminous coal-fired units, EPA should allow either a 75-80% reduction or a stack limit of at least 2.0 lb/TBtu. For existing bituminous units, Southern supports the stack limit of 2.2 lb/TBtu (a 73% reduction) proposed by industry during the MACT Working Group meetings.

E. EPA Should Extend the Three Year Compliance Deadline for the Proposed MACT Standards.

EPA proposes to require compliance with its MACT limits within three years of the effective date of those limits. In so doing, EPA has followed the requirements of CAA § 112(i)(3)(A). EPA has discretion under CAA § 112(i)(3)(B) to extend this compliance time under the CAA for existing sources by one year "if such additional period is necessary for the

---

[59] *See* Larry S. Monroe, "Commercialization of Emission Control Technologies in the U.S. Utility Industry, with a particular focus on mercury controls," at 9-11 (June 28, 2004).

[60] Tests of selective non-catalytic reduction units have shown little or no oxidation of elemental mercury. EPA's statement in the preamble to the contrary is simply not supported by any test data. *See* EPRI, "Impact of NOx Controls on Mercury Controllability," EPRI Report No. 1007221 (July 2002).

installation of controls." EPA has requested comment as to whether a one-year extension "should be granted for facilities required to install controls in order to comply with the section 112 MACT rule."[61] For the reasons discussed below, Southern strongly supports EPA using its discretionary authority to extend the compliance deadline for all existing units by one year.

EPA's proposed MACT limits will require many units to retrofit mercury control technology. Even if mercury-specific controls were commercially available, the retrofit process is complex and includes design, procurement, assembly of skilled labor and construction equipment, and permitting. For mercury control, this process is complicated because mercury-specific control equipment is not commercially available.[62] In addition, all retrofits must be scheduled to ensure reliable electric service to the public throughout the retrofit period.

To comply with EPA's MACT limits, many bituminous units may rely on the installation of SCRs and scrubbers. SCR installation requires an average of 24 months.[63] Scrubber installation takes at least 36 months.[64] It is difficult, if not impossible, to make similar predictions about the time needed to install mercury-specific control equipment like ACI because, as EPA has recognized, mercury-specific control technology will not be available for commercial deployment on a wide scale until "after 2010, perhaps later."[65] There have been

---

[61] 69 Fed. Reg. at 4682.

[62] *See* "Industry Stakeholder Recommendations to EPA," letter to co-chairs of the EPA Utility MACT Working Group, 6 (hereinafter "Stakeholders' Comments") (Sept. 6, 2002); *see also* J.E. Cichanowicz, Michael Hein & Jim Marchetti, "Utility Industry Response to the IAQR Mandates: Estimates of Technology Retrofit and Schedule" (hereinafter "Industry Response") (Mar. 30, 2004) (Attachment 10 to UARG's Comments); 69 Fed. Reg. at 4675 (discussion of beyond-the-floor options for existing units).

[63] Industry Response at 10.

[64] Stakeholder Comments at 7.

[65] 69 Fed. Reg. at 12403. This admission by EPA essentially satisfies the criteria for granting an extension of the compliance deadline.

only four large scale demonstrations using ACI as a control technique.[66] Although additional testing is ongoing with results expected in late 2004 and 2005, insufficient data and equipment availability exist to consider ACI a currently-valid control option.[67] Questions also remain about the availability and adequacy of activated carbon supplies and the bag material for polishing baghouses.

In addition to the time needed to plan, design, and install new equipment, EPA must recognize that a number of states impose permitting requirements on the disposal of new waste streams in solid waste landfills.[68] In Georgia, it is anticipated that 24-36 months will be needed just to obtain necessary landfill permits for a new waste stream.[69]

Another significant problem in meeting a three-year MACT compliance date is the availability of skilled labor. Despite optimistic estimates by some that there may be sufficient labor to complete the retrofits required to comply with the 2010 deadline in the CAIR, Southern Company feels strongly that the CAIR deadline alone is impossible to meet by 2010. Hence, there is no evidence that there will be sufficient skilled labor to meet both the MACT and CAIR construction deadlines, nor will the current skilled labor force be able to satisfy the demands generated by the three-year MACT deadline.

The availability of construction equipment, such as very large construction cranes, also affects compliance time.[70] Without this specialized construction equipment, compliance

---

[66] Larry S. Monroe, "Commercialization of Emission Control Technologies in the U.S. Utility Industry, with a particular focus on mercury controls," at 14 (June 28, 2004).

[67] *Id.* at 12-17.

[68] Industry Response at 10. This is significant for those units that may adopt control procedures that result in a new waste stream such as activated carbon laden with mercury.

[69] *Id.*

[70] Stakeholders' Comments at 7.

deadlines cannot be met. Finally, even if the technology were commercially available and a unit could meet the early 2008 compliance deadline, there would probably be little time for start-up testing to ensure the retrofit operates safely and meets the required emissions limitations. Start-up testing normally takes several months.[71]

EPA has stated that necessary mercury control technology will not available on a wide commercial basis until 2010 or later, and existing units have shown that, even if the technology is available, it will take more than three years to plan, permit, and complete the construction of the retrofits necessary to comply with this rule. Congress gave the Administrator discretionary authority to extend the compliance deadline, presumably with the realization that there would be cases where longer than three years would be needed to comply with MACT limits. Southern urges EPA to use its discretionary authority to grant a blanket extension to all units that will be required to install controls in order to comply with the rule.

In the proposed rule, EPA expresses its concern that it cannot grant an extension to all units because there are currently units that are in compliance with the proposed MACT limits and it cannot extend the compliance time for those units.[72] However, at the present time, it is impossible to know which units are currently complying with EPA's proposed limits and which are not. No unit is currently monitoring mercury emissions to be able to assess its compliance status. Modeling based on 1999 ICR results is not a reliable basis for deciding whether a unit is currently in compliance. Furthermore, given the complexities of the CAIR and the mercury MACT proposals, many units will be forced to change their current operations in order to comply with both rules. As a result, EPA should not differentiate between units based on a

[71] *Id*.

[72] *See* 69 Fed. Reg. at 4682.

unit's estimated mercury emissions, since those estimates may not reflect actual compliance. EPA should issue a blanket one-year extension to all units.

An extension of the compliance date is also consistent with Congress' prior recognition of the time needed to retrofit changes in the utility industry. Congress has taken into account the size, complexity, and national importance of the electricity generating utility industry in the past, acknowledging, for instance, that retooling the industry to comply with its sulfur emission control goals would take much longer than three years. In fact, Congress permitted most units to wait until Phase II of the Title IV Acid Rain Program, which began in 2000, before having to comply.[73] This was a full ten years after the passage of the 1990 Clean Air Act Amendments and seven years after the date EPA finalized the trading program's "core rules."[74]

In addition, CAA § 112(i)(4) allows the President to exempt "any stationary source from compliance" for any number of two-year periods if doing so is in the national security interest of the United States and if the technology to implement the standard is not available. Both findings can be made regarding the implementation of EPA's proposed MACT rule.

As evidenced by the blackouts that unexpectedly hit the eastern United States in the summer of 2003, insufficient power availability can dramatically impact the country. Retrofitting units to comply with the mercury MACT will require units to be taken off-line during the construction phase. Only so many plants can be taken off-line in a given region before the power grid in that region -- and perhaps throughout the nation -- is affected.

If EPA forces all units to comply with the three year deadline, the reality is that many of those units will need to be taken off-line toward the very end of the three-year period. Given the

[73] CAA § 405(a); 42 U.S.C. § 7651d(a).

[74] *See* 58 Fed. Reg. 3590 (Jan. 11, 1993).

very tight compliance deadline proposed by EPA, most units will need to be in the actual construction phase simultaneously. A significant impact on energy availability will result if units must undertake the construction phase of the retrofit process concurrently.

In addition, sufficient technology does not currently exist on the scale needed to ensure a rapid and safe retrofit process in the time period established under the CAA. Mercury-specific controls necessary to comply with the rules as proposed are, at best, in a demonstration phase.[75] EPA itself estimates that wide-scale availability of advanced mercury control technology like ACI will not occur until 2015 -- a full seven years after the proposed MACT compliance deadline.[76] Moreover, without the necessary materials such as activated carbon and material to produce bags for fabric filters, units cannot be retrofit with control technology, and the standard cannot be implemented. Also, as discussed above, there is insufficient construction equipment in the United States, such as very large cranes, to meet the demand that will be created by the very short MACT deadline. In short, there is a lack of available control technology to comply with the standard by EPA's proposed deadline. Thus, there are reasonable grounds for at least one, and probably two, two-year presidential extensions for many coal-fired units.

EPA cannot adopt a "wait and see" attitude, agreeing to consider an extension for individual units at some point in the future. This will be no different than declaring that there will be no extensions, because units will have to begin the planning and acquisition process upon publication of the rule. Therefore, EPA must address the compliance deadline issues in the final rule.

---

[75] *See* 69 Fed. Reg. at 12403.

[76] *Id*.

F. Monitoring

EPA's proposed MACT standard requires sources to monitor mercury emissions continuously. It provides sources the option of using either a mercury continuous emission monitoring system ("CEMS") or Method 324. If EPA decides to proceed with its MACT proposal, Southern supports EPA's decision to allow sources the option of using either a mercury CEMS or Method 324 to measure mercury emissions. The choice of methods is critical to the success of any mercury regulatory program because of the uncertainties regarding mercury monitoring technology.[77]

III. EPA's MACT Proposal for Oil-Fired Units

Based on the screening level risk assessments conducted as part of EPA's Utility Report to Congress, EPA does not have statutory authority to regulate nickel emissions from oil-fired utility units. Before it can regulate nickel emissions from oil-fired units, the Clean Air Act requires EPA to review and consider current information on nickel emissions, recent speciation studies, and recent risk assessments based on current data. In addition, EPA must consider the fact that a number of the units with the highest predicted risks in EPA's earlier screening risk assessments no longer burn oil as their primary fuel source. Even if EPA could demonstrate a public health concern with regard to nickel emissions from oil-fired emissions, its MACT proposal would nevertheless suffer from numerous problems -- the foremost being the extremely limited database EPA used to set the MACT floors. Twelve units, some of which had pilot-scale control equipment installed, should not be the basis for an industry-wide standard.

[77] *See* section V. *infra* for a more detailed discussion of general monitoring issues.

A. EPA Cannot Regulate Nickel Emissions from Oil-Fired Units Because It Does Not Have Authority To Do So Under the Clean Air Act.

As discussed above, Congress decided to treat electric utility steam generating units differently under § 112. Section 112(n)(1)(A) requires EPA to perform a study of the hazards to public health reasonably anticipated to result from emissions of HAPs from electric utility steam generating units and then to regulate those HAPs only where regulation is "appropriate and necessary" to protect public health.[78]

EPA's December 2000 listing decision is devoid of factual bases for its decision to list oil-fired electric utility steam generating units under § 112(c). The listing notice focuses almost exclusively on mercury emissions as the primary reason for listing electric utility steam generating units under § 112(c). Almost as an aside, EPA notes that nickel is one of a handful of metals that are "of potential concern for carcinogenic effects." EPA adds that "although the results of the risk assessment indicate that cancer risks are not high, they are not low enough to eliminate those metals as a potential concern for public health."[79] In the conclusions section of the listing notice, EPA cites only findings about mercury and its public health impacts. Despite the absence of any health finding regarding nickel, EPA nevertheless includes oil-fired units on the list of § 112(c) source categories.

The only analysis of potential health risks posed by nickel emissions from oil-fired power

[78] *See* 69 Fed. Reg. at 4660 ("[t]he EPA interprets section 112(n)(1)(A) as only authorizing regulation of utility units under section 112 with respect to HAP emissions from such units that EPA has determined are 'appropriate and necessary' to regulate under section 112 because they are reasonably anticipated to result in a hazard to public health even after imposition of the other requirements of the CAA.")

[79] 65 Fed. Reg. at 79827.

plants is contained in EPA's 1998 Utility Report to Congress.[80] The nickel risk assessments in the Utility Report were performed at a screening level, and relied on conservative assumptions about the species and the toxicity of nickel emitted from oil-fired units.

EPA based its nickel risk assessments on an assumption that half of all nickel emitted from oil-fired units is as carcinogenic as the most carcinogenic form of nickel.[81] According to EPA, "[t]here are substantial uncertainties associated with nickel speciation. In this analysis, as a conservative assumption, the mix of nickel compounds emitted by oil-fired utilities was assumed to be 50 percent as carcinogenic as nickel sub-sulfide, which is a class A human carcinogen."[82] Yet, EPA's own speciation data indicated that "3 to 26 percent of nickel emission from oil-fired utilities are sulfidic nickel," so its screening level assumption at least doubled the risk that EPA calculated for nickel emissions. In fact, EPA has speciated nickel data from only two oil-fired units.[83] Those two sites were found to emit a number of nickel species, including nickel, sulfidic nickel, nickel monosulfide, nickel sulfide, nickel sub-sulfide, metallic nickel, and oxidic nickel. The average speciation at the two test sites are: 58 percent soluble nickel, 3 percent sulfidic nickel, and 39 percent nickel oxides.[84]

---

[80] *Study of Hazardous Air Pollutant Emissions from Electric Utility Steam Generating Units -- Final Report to Congress*, EPA-453/R-98-004a (hereinafter "Utility Report") (Feb. 1998).

[81] *See id.* at 6-7.

[82] *Id.* Nickel releases are not of equal health effect since the various nickel compounds vary significantly in terms of their toxicity. EPA's IRIS database lists nickel subsulfide and nickel refinery dust as Class A carcinogens and nickel carbonyl as a probable carcinogen. EPA has made no determinations for other nickel compounds, although it has posted information as to nickel soluble salts on its IRIS database.

[83] *See id.* at 6-47.

[84] *Id.*

Based on the data available, EPA's risk assessment for oil-fired units determined that up to 11 of the 137 oil-fired plants were estimated to potentially present inhalation risks above 1×10^{-6}, with nickel considered to be the primary contributor to the cancer risk.[85] According to EPA, "[i]f alternative methods and assumptions were used to study the HAP emission from utilities, the results of [the risk modeling] would likely be somewhat different."[86] The Utility Report notes that EPRI developed its own study paralleling the Utility Report, and that while "[m]any of the same emissions data were used and similar risk assessment methods were utilized, ... [p]opulation inhalation risks [for nickel emissions] were determined by the EPRI to be insignificant."[87]

The EPRI study "brought together information on airborne trace substances, analytical methods, and results of recent and ongoing research" that EPRI and other organizations had undertaken. EPRI looked at existing research to assess the health risk associated with the emission of certain trace substances from electric utility power plants. Its analysis focused on sixteen substances "most likely to be found in utility stack emissions."[88] This included nickel.

While EPRI's study considered available data from a limited number of field tests on oil-fired units, the report ultimately found that trace substance emissions from oil-fired units, after compliance with other provisions of the CAA, would not pose significant long-term risks (either

---

[85] *Id.* at ES-8. Despite this assessment, EPA states at the end of the Utility Report that additional research is necessary on the speciation issue. *Id.* at 14-8. "[In fact,] the cancer incidence due to nickel emissions could possible be as low as zero." *Id.* at 6-49.

[86] *Id.* at ES-26.

[87] *Id.*

[88] EPRI, *Electric Utility Trace Substances Synthesis Report,* vol. 1, at 1-5 (hereinafter "EPRI Study") (1994).

carcinogenic or non-carcinogenic) to human health.[89]

In a report released in November 2003 by the Energy and Environmental Research Center ("EERC"), actual emissions from two oil-fired utility boilers were studied for their respective nickel content -- both quantity and species. EERC selected two utility boilers that were representative of residual oil-fired units.[90] It monitored actual emissions on an hourly basis and took samples for testing; it then applied the most recent testing methods to determine the species of the nickel emitted. [91] Direct speciation measurements showed a noticeable lack of sulfidic nickel emitted.[92]

As explained in EERC's report, the chemical speciation of nickel in fly ash from the combustion of 0.9 and 0.3 weight percent sulfur residual oils revealed nickel sulfate hydrate ($NiSO_4$ x H_2O) and nickel oxide compound mixtures and a noticeable lack of carcinogenic nickel subsulfide (Ni_3S_2) or nickel sulfide compounds.[93] The report notes that these findings are contrary to EPA's inhalation cancer risk assessment, which essentially assumed that 50% of the nickel compound mixture emitted from oil-fired utilities were as carcinogenic as nickel

---

[89] *Id*. at *iii, iv*. According to the EPRI Study, "[f]or the roughly 600 plants investigated [including all fuel types], the expected increase in individual cancer risk, incorporating exposure assumptions associated with maximum exposure over a 70-year life span, did not exceed [EPA's acceptable risk level of] 1.7 in one million Of this entire group of plants, only 3 approached exposures leading to a cancer risk greater than 1 in a million" for an individual facing "maximum exposure." *Id.*

[90] Energy and Environmental Research Center, *Nickel Species Emissions Inventory for Oil-Fired Boilers,* Final Report 03-EERC-11-05, at 3 (November 2003) (Docket No. OAR-2002-0056-0018).

[91] *Id*.

[92] 95% of the total nickel in fly ash was a mixture of $NiSO_4$ x H_2O and nickel oxide compound. *Id*.

[93] *Id*. at 16-17.

subsulfide (Ni_3S_2). EPA should use these data and produce more realistic risk assessments.[94]

EPA should also consider recent DOE information showing that some of the oil-fired plants deemed to pose the greatest risk for nickel inhalation in the 1998 Utility Study either no longer operate, or have changed their primary fuel from oil to another fuel, such as natural gas.[95]

The evidence in the rulemaking record fails to substantiate a public health risk associated with nickel emissions from oil-fired units. Absent a proven risk, regulation of nickel is not "appropriate and necessary" under the CAA, and EPA should rescind its listing decision for oil-fired units.

B. Assuming EPA Establishes Its Legal Authority To Regulate Nickel Emissions from Oil-Fired Units, the Existing Database Is Insufficient To Set MACT Limits.

Even if EPA establishes that regulation of nickel from oil-fired units is "appropriate and necessary," which it has not to date, EPA has based its nickel MACT floor analysis on an unrepresentative, insufficient database. At the very least EPA should obtain more data from representative units before proceeding with nickel MACT limits.

Documents available from EPA's website show that the nickel MACT floor is based on approximately three hours of operational data from twelve units.[96] Nickel emissions ranged from 1.6 lb/TBtu to 2167 lb/TBtu. The lowest-emitting unit was equipped with a "pilot-scale pulse-jet

---

[94] In fact, EPA notes in the Utility Report that "further assessment would be needed in several areas to gain a better understanding of the actual risks posed by electric utilities." Utility Report at 6-1. Now that a "further assessment" has been completed, it should be considered.

[95] *See, e.g.*, Existing Electric Generating Units in the U.S. by State, Company and Plant, 2002, located at http://www.eia.doe.gov/cneaf/electricity/page/capacity/existing2002.xls. As an example, the Bryan, Devon, and Alamitos stations now list natural gas as their primary fuel source.

[96] Two units were tested twice, for a total of 14 data points.

fabric filter," a developmental technology not in commercial operation anywhere in the country.[97] Such variability should be reason enough for EPA to seek additional data before setting a MACT floor.

Additionally, EPA's database did not consider emissions from a sufficient number of units. Assuming there are approximately 130 oil-fired units in the country, data from twelve units is simply too small a data set to determine a MACT floor.[98] Congress intended for EPA to obtain data from enough sources to establish a standard that is achievable by a reasonable group of sources. EPA has not done that.

C. Exclusion of Gas-Fired Units

Southern supports EPA's decision to exclude units that that burn oil less than 2% of the time from compliance with the nickel emission limits applicable to oil-fired units.[99] However, EPA should raise this limit to coincide with the already-established 10% limit used in the Acid Rain Program.[100]

While Southern appreciates and supports EPA's decision to exempt units that burn only a small amount of oil in a given year, the usage threshold should be raised to at least a 10% cap

---

[97] *See* Oilhaps.xls *available at* http://www.epa.gov/ttn/atw/combust/utiltox/utoxpg.html.

[98] This is particularly the case because of EPA's interpretation of § 112(d)(3)(A). EPA reads that provision to require it to set the MACT floor for existing units based on the top 12% of the sources for which it has data. Thus, 12% of 12 sources is 1 or 2 sources. In either case, this is too small a number of sources to set a MACT limit for oil-fired units.

[99] "EPA considers a unit to be an oil-fired unit if … it fires oil in amounts greater than or equal to two percent of its annual fuel consumption." 69 Fed. Reg. at 4705.

[100] See 40 C.F.R. § 72.2. (defining oil-fired as combusting fuel oil for more than 10% of the average annual heat input during the previous three calendar years or for more than 15% of the annual heat input for any one of those years.) This definition is already established and understood by the industry. It should simply be duplicated in the current rulemaking for the sake of consistency and clarity.

limitation in order to encompass a broader array of units and real-world situations. Simply put, if 90% of the fuel burned by a unit is not oil, then it is presenting 1/10th of the risk as a unit that is burning oil 100% of the time. Since EPA states in the proposed rule that any health risk associated with nickel emissions is "not high," and since units that burn oil in addition to other fuels base their decisions, at least in part, on market fluctuations and on which fuel is most readily available, allowing a slightly higher cut-off limit will provide units with slightly more flexibility in fuel choices without any significant effect on the already-minimal health risk associated with nickel emissions.[101]

EPA should also clarify precisely how this exemption will be determined.[102] It should state that the applicability of the exemption is based on oil use as a percent of the unit's annual heat input.[103]

D. Exemptions of Distillate Oil Units

EPA proposes exempting oil-fired units that burn exclusively distillate oil from compliance with the nickel emission rules under both regulatory alternatives.[104] As proposed, "[i]f an oil-fired unit is currently burning, or switches to burning, distillate oil (exclusively) it

---

[101] *See* 65 Fed. Reg. at 79827.

[102] There are inconsistencies in the proposed rule. The preamble states that a unit is considered to be an oil-fired unit and subject to the nickel MACT if it is equipped to fire oil and/or natural gas, and if "it fires oil in amounts greater than or equal to two percent of its *annual fuel consumption*." 69 Fed. Reg. at 4705. However, the same preamble states that the nickel MACT would not apply to units that combust natural gas "greater than 98 percent *of the time.*" *Id.* at 4657.

[103] EPA should consider additional alternatives for unit exemptions, as well. For instance, units with a very low capacity factor, such as 5% or its equivalent, or units that are in operation for only a limited number of hours in a given year, should be exempt.

[104] *See* 69 Fed. Reg. at 4663, 4705.

would be exempt from all oil-fired unit initial and continuous compliance requirements until such time as it begins burning any oil other than distillate oil."[105] Southern supports this exemption.

According to EPRI's analysis, in 1990 approximately 87% of the units that used oil for fuel burned residual oil. The remaining 13% used other fuels, including some distillate oil.[106] EPRI also noted that distillate fuel oil contains fewer trace constituents than residual fuel oil.[107]

EPA studies have shown that nickel content decreases depending on the grade of fuel oil used, with higher-grade oils containing less nickel (e.g., no. 2 distillate fuel oil has a lower nickel content than no. 6 residual fuel oil),[108] and that the greater the nickel content in the fuel, the higher the rate of nickel emissions.[109] Given the much lower nickel emissions from units burning distillate oil, they should be exempt from any MACT limits for nickel.

EPA should also address how this rule will be applied to units that burn only distillate oil and natural gas. Despite the discussion in the preamble concerning dual-fired units, it is not clear whether units that burn 50% distillate oil and 50% natural gas (or any other combination of distillate oil and natural gas, but where the oil the unit burns is solely distillate) would qualify for this exemption since the unit is not "burning any oil other than distillate," and it is burning

---

[105] *Id*.

[106] EPRI Report at 4-15.

[107] *Id*.

[108] *See* "Locating and Estimating Air Emissions From Sources of Nickel," EPA- 450/4-84-007f, at 111 (March 1984) (listing the average nickel content of residual (no. 6) fuel oil from 10 - 48.5 ppm (depending on sulfur content), and the range of nickel content for distillate (no. 2) fuel oil as <0.02-1.7 ppm).

[109] *Id*. at 112.

distillate oil "exclusively." The text of the proposed rule is not helpful because it apparently includes a typographical error.[110] Units that burn exclusively distillate oil, in combination with natural gas, should be exempt.

E. Beyond-The-Floor Conclusion That Fabric Filters Are Not a Viable Option for Oil-Fired Units

According to the proposed rule, "[t]here has not been a new oil-fired unit constructed in the U.S. since 1981. If a new unit is constructed, the only technology that might offer emissions control better than the proposed new unit MACT limits is the use of fabric filtration."[111] However, due to the nature of oil-fired emissions, EPA does not consider fabric filtration to be a viable option for oil-fired units.[112]

Southern agrees with this assessment. Coal-fired unit emissions and oil-fired unit emissions are inherently different. While the emissions from coal-fired units are characterized by dry gaseous emissions that will allow a fabric filter to effectively remove particulates and metals, oil-fired units produce ash having very different characteristics. Oil-plant ash is not dry, like coal-plant ash. As a result, a fabric filter quickly clogs and ceases to perform in its designed manner. Fabric filters are not a viable control technology for oil-fired units.

F. Monitoring

If EPA determines that regulation of oil-fired units is necessary, then Southern agrees that periodic stack testing is an appropriate means of establishing compliance. Southern does not agree, however, with EPA's proposal to impose operating limits based on control device

---

[110] *See* 69 Fed. Reg. at 4721 (proposed rule § 63.9991(b)).

[111] *Id.* at 4680.

[112] *Id.*

parameters. EPA should instead employ an approach similar to the Compliance Assured Monitoring ("CAM") rule that uses parameter monitoring to assure compliance with emission limits without imposing unnecessary and unreasonable restrictions on unit and control device operation.

IV. EPA's Cap-and-Trade Proposal

If EPA ultimately decides to pursue regulation of mercury emissions from power plants, Southern supports the cap-and-trade alternative under CAA § 112(n)(1)(A), or alternatively, under CAA § 111. The proposed emissions trading program will achieve a greater amount of mercury reductions from coal-fired power plants at far less cost than the proposed MACT alternative. As EPA acknowledges in its proposal, a previous emissions trading program promulgated by EPA under Title IV of the CAA has successfully reduced emissions of air pollutants.[113] An emissions trading program will work equally well to reduce mercury emissions from coal-fired power plants.

The factual realities of mercury emissions are such that it makes little environmental or economic sense to impose command-and-control MACT requirements on every coal-fired plant. Mercury emissions are a global issue, with over 70% of mercury that deposits in the United States coming from foreign sources. Coal-fired power plants in the United States contribute only about one percent of emissions to the global pool, and EPRI modeling work predicts that reducing total mercury emissions from coal-fired power plants to 15 tons annually will reduce mercury deposition in the United States by only 6.9% -- from 166.1 tons per year to 154.6 tons

[113] *Id.* at 4697.

per year deposited.[114] As a result, if EPA decides that regulation of mercury from coal-fired power plants is "appropriate and necessary," it makes sense for EPA to set limits on total annual mercury emissions and allow coal-fired plant operators to determine how best to achieve those limits.

Because of the uncertainty regarding current and future mercury emissions, the difficulty Southern and others will have installing control technology to meet the first phase of the CAIR,[115] and the uncertainty around the co-benefits that will actually occur from the control technology that is installed, Southern believes that EPA should modify its cap-and-trade proposal to involve three phases. Under Phase 1 of the program, which would begin in 2010, EPA would not specify a nationwide numeric mercury limit. Instead, reductions in mercury emissions would be achieved by the installation of new control equipment to comply with the requirements of EPA's proposed CAIR rule. Because there is no way to know what actual reductions in mercury emissions will occur as a result of utilities' efforts to meet the requirements of the CAIR, it makes no sense for EPA to set a numeric limit for Phase 1. Any attempt by EPA to estimate the level of mercury co-benefits that will occur in 2010 as a result of implementation of the CAIR can be no better than a guess. The best way to meet EPA's stated intent of having the first phase of the mercury cap-and-trade program reflect the co-benefits achieved from the CAIR is not to set a numeric limit for Phase 1. If EPA does not set a numeric cap for Phase 1, then mercury banking should not be allowed for that Phase.

---

[114] EPRI Comments on EPA Proposed Emission Standards/Proposed Standards of Performance, Electric Utility Steam Generating Units: Mercury Emissions, at 53, Table B.1-6 (June 16, 2004).

[115] Comments of Southern Company on the Proposed Rule to Reduce Interstate Transport of Fine Particulate Matter and Ozone (Interstate Air Quality Rule now known as CAIR), at 1-3 (Mar. 30, 2004).

Under Phase 2 of the cap-and-trade program, which would begin in 2015, EPA would establish a cap of 24 tons per year on mercury emissions from coal-fired power plants. The cap-and-trade program would begin during Phase 2, with allowances allocated based on heat input, which would be adjusted by factors of 1.0 for bituminous units, 1.5 for subbituminous units, and 3.0 for lignite units. Phase 3 of the program would begin in 2018 with the cap on mercury emissions being reduced to 15 tons per year.

Utilizing its legal authority under § 111 and § 112(n)(1)(A) of the CAA, EPA has proposed a cap-and-trade program to regulate mercury emissions from coal-fired power plants. Southern agrees with EPA that it has legal authority under either § 111 or § 112 to promulgate a cap-and-trade program. If EPA decides to regulate mercury emissions from coal-fired power plants, Southern supports a federal cap-and-trade program under § 112, which would create a much more efficient regulatory structure. A state cap-and-trade program under § 111(d) could result, under EPA's interpretation, in a patchwork system with variances from one state to the next. A cap-and-trade program under § 112(n)(1)(a) has practical advantages over a similar program promulgated under § 111.

A. EPA's Proposed Emissions Trading Program Under § 111

Southern believes that EPA has provided a reasonable explanation to support its legal authority to promulgate a cap-and-trade program pursuant to § 111. In reaching this conclusion, Southern focused on EPA's authority under § 111 to regulate HAPs that are listed under § 112(b)(1) and on whether a cap-and-trade program fits within the definition of "standard of performance" under § 111(a)(1).

Section 111 provides EPA with statutory authority to regulate mercury emissions because nothing in the legislative history suggests that Congress sought to regulate HAPs exclusively

under § 112. Under § 111(d), EPA promulgates "standards of performance" that must be included in state plans applicable to those sources.

EPA notes that two different and conflicting amendments to § 111(d) were enacted in the 1990 Amendments to the CAA.[116] EPA harmonizes the inconsistent language by finding that: "Where a source category is being regulated under § 112, a § 111(d) standard of performance cannot be established to address any HAP listed under § 112(b) that may be emitted from that particular source category."[117] Under EPA's interpretation of the conflicting provisions of § 111(d), if EPA regulates a source category under § 112, then EPA could not use § 111(d) to regulate HAP emissions from that particular source category. Based on this, EPA proposes to delist utility units from the § 112(c) list of source categories; Southern supports that delisting proposal. Southern also believes that EPA's attempt to reconcile the differing language in § 111(d) is reasonable and legally supportable.

A cap-and-trade system also fits within the definition of "standard of performance" under § 111(a)(1). "Standards of performance" are intended to reflect the "degree of emission limitation achievable through the application of the best system of emission reduction which (taking into account the cost of achieving such reduction and any nonair quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated."[118] Although the legislative history does not specifically address whether an allowance or trading program was intended under the term "standard of performance," Congress intended that existing sources be accorded flexibility in meeting

---

[116] *See* 69 Fed. Reg. at 4685.

[117] *Id*.

[118] CAA § 111(a)(1) 42 U.S.C. § 7411(a)(1).

regulatory standards.[119] Accordingly, it is reasonable to interpret this legislative history as generally supporting a cap-and-trade program.

EPA proposes that a cap-and-trade program has been adequately determined to be the best system for reducing mercury emissions from power plants.[120] After implementation of the control requirements by 2010 and 2018, EPA will evaluate the emission levels, health risks, and available control mechanisms to confirm whether the cap-and-trade program constitutes the "best system" of emissions reductions.

Although Southern believes that EPA's explanation of its legal authority to propose a cap-and-trade program pursuant to § 111 of the CAA is reasonable, Southern disagrees with EPA's proposal to allow states to decide not to participate in a § 111 trading program. Because EPA has proposed "to determine that a cap-and-trade program has been adequately determined to be the *best system* for reducing [mercury] emissions from coal-fired Utility Units"[121] after "taking into account the cost of achieving such reduction,"[122] states cannot be permitted to opt out of the § 111 interstate trading program. States cannot interfere with EPA's determination that an interstate cap-and-trade program is the best system for reducing mercury emissions from coal-fired plants. Although states may have some authority under a § 111 trading program, states do not have the authority to change the standard of performance set by EPA.

---

[119] The House Report accompanying the proposed 1977 CAA Amendments stated that, for standards under § 111(d), the Administrator would establish guidelines defining the best system for each category of existing source, and states would have the responsibility for determining the applicability of such guidelines to any particular source or sources. H.R. Rep. No. 95-294, at 195, *reprinted in A Legislative History of the Clean Air Act Amendments of 1977*, Vol. 4, at 2662 (1978).

[120] *See* 69 Fed. Reg. at 4697.

[121] *Id*. (emphasis added).

[122] CAA § 111(a)(1), 42 U.S.C. § 7411(a)(1).

Permitting states to opt out of a cap-and-trade program established under § 111 will lead to a patchwork approach to regulation that will affect the standard of performance that EPA has determined is the best system for achieving mercury emissions reductions from coal-fired utility units. Section 111(a)(1) requires that EPA's determination of a standard of performance involve an analysis of the costs involved. In this case, those cost estimates were premised on the establishment of a cap-and-trade program in all 50 states without restrictions. Those cost estimates will change if some states opt out of the cap-and-trade program -- not only for sources in those states but also for sources in other states, which will have a lower pool of allowances available to them. Permitting states to opt out of the trading program in essence allows states to change the standard of performance, which the CAA does not authorize.

Similarly, allowing a state to issue only a portion of the allowances available within the state would effectively permit that state to modify the federally determined standard of performance. Any allowances withheld by a state would reduce the nationwide cap, which EPA determined was the standard of performance that represented the best system of emission reduction. Under § 111(a)(1), it is EPA's obligation to set a standard of performance. States have authority under § 111 to determine how to allocate mercury allowances to sources within their borders (such as by determining whether to have a permanent or an updated allocation). States must be required, however, to allocate *all* available allowances to avoid changing the standard of performance set by EPA.

Southern supports EPA's determination under § 111 that a cap-and-trade program will provide the "best system" of mercury reduction. The Acid Rain program and the NOx SIP Call rulemaking have demonstrated that a cap-and-trade system provides industry with the flexibility to comply with national emission levels in a cost-effective manner. EPA must make it clear,

however, that states do not have the authority to opt out of the interstate trading program, or to participate but not to allocate all available allowances, to ensure that the standard of performance set by EPA is not undermined. Southern believes that EPA's proposal to promulgate a cap-and-trade program under § 112 provides a more legally defensible and stronger basis for the program.

B. EPA's Cap-and-Trade Program Under § 112(n)(1)(A)

Section 112(n)(1)(A) provides EPA with broad authority to identify public health concerns and craft regulations to address them.[123] The best reading of § 112(n)(1)(A) is that Congress intended EPA to consider a variety of control options to address the health concerns identified in the Utility Report to Congress and then to promulgate rules based on the best of those options.[124] Section 112(n)(1)(A) provides that EPA shall regulate *under this section* if the Administrator finds that regulation is appropriate and necessary. EPA could establish regulations under § 112(n)(1)(A) itself, or the MACT provisions of § 112(d), or the risk-based provisions of § 112(f) and meet the § 112(n)(1)(A) command of regulating "under this section." But, § 112(n)(1)(A) does not require EPA to regulate under § 112(c) and (d).

EPA's proposed cap-and-trade program pursuant to its legal authority under § 112(n)(1)(A) is superior to the § 111 program. A program promulgated under § 111 will be implemented by the states, creating potential procedural and administrative disadvantages. A cap-and-trade mechanism under § 111 would create a legal mechanism that requires each state to conduct separate rulemakings to implement the program.

---

[123] *See also* section I.A., *infra*.

[124] The limited legislative history of § 112(n)(1)(A) supports a broad grant of authority. It indicates that EPA has broad discretion to establish regulatory standards if such standards are necessary to protect public health.

On the other hand, a cap-and-trade program under § 112 will be federally implemented with one national procedure. Southern supports this approach because federal cap-and-trade programs have a history of success. The Acid Rain Program, a national cap-and-trade program covering SO_2 emissions from utilities, has resulted in a 41% reduction in SO_2 emissions from 1980 through 2002 (despite a significant increase in electrical generation). States also would have the ability, on various levels, to adopt state-based mercury controls under § 112.

Because a federal cap-and-trade program promulgated under § 112 will provide more certainty and flexibility to industry, as well as having the most certain level of reductions in mercury emissions, Southern supports such a program.

C. Implementation of a Federal Cap-and-Trade Approach To Regulate Mercury Emissions from Electric Utility Steam Generating Units

A cap-and-trade program under § 111 or § 112 has advantages over regulation unit-by-unit or facility-by-facility pursuant to § 112 MACT standards. When implemented, a mercury cap-and-trade system establishes emissions caps that cannot be exceeded, even when existing plants are expanded and new plants are constructed. A cap-and-trade program provides absolute certainty with regard to national emissions, while simultaneously permitting utilities to make more rational investments in emissions control. A § 112 MACT approach would not limit overall emissions to the environment and therefore does not provide the same amount of environmental protection. Moreover, a MACT approach would not provide the most cost-effective means of achieving mercury emissions control. In addition, a cap-and-trade approach will stimulate the development and adoption of new, cost-efficient technologies. Under a MACT rule, development of new technologies is stifled because sources will be reluctant to invest in new technology that, if it does not perform, will leave the unit in violation of the MACT standard.

1. "Hot Spots" Will Not Result from a Mercury Cap-and-Trade Program.

Whenever EPA proposes a cap-and-trade program, concerns are voiced about whether "hot spots" will result from the program. This claim has already been raised regarding the proposed mercury cap-and-trade program. In reality, no mercury "hot spots" exist in the United States, and EPA's proposed cap-and-trade program will not create them. A literature review has failed to find any evidence of elevated mercury deposition levels near coal-fired power plants. Furthermore, model simulations of several coal-fired power plants in the Southeast (without consideration of the ionic to elemental conversion that would further lower these estimates) show that only four to five percent (calculated by a grid model) or three to four percent (calculated by a plume model) of a coal-fired power plant's mercury emissions deposit within 50 kilometers of the plant. This represents only one to ten percent (grid model) or one to eight percent (plume model) of simulated deposition in the same area. Grid models overestimate deposition within 50 kilometers relative to plume models by factors of 1.2 to 1.3.[125]

In support of claims of mercury "hot spots," commenters often point to mercury deposition modeling work performed by EPA using the Regional Modeling System for Aerosols and Deposition ("REMSAD") model. Detailed work by EPRI shows, however, that regional grid models -- like REMSAD -- over predict local effects such as local mercury deposition (i.e., within the area of the 16.7 by 16.7 kilometer grid cell) by factors of 1.6 to 3.4.[126]

---

[125] EPRI Comments on EPA Proposed Emission Standards/Proposed Standards of Performance, Electric Utility Steam Generating Units: Mercury Emissions (June 16, 2004), at 57-64.

[126] *Id*.

Some commenters suggest that a report released by the Florida Department of Environmental Protection in late 2003 demonstrates the existence of "hot spots" and further demonstrates that limiting mercury releases from coal-fired power plants will cause rapid decreases in mercury concentrations in the local/regional environment. Neither conclusion follows from the Florida report, however. Although an extensive and valuable body of research has been conducted in south Florida, two major problems exist with how the results have been interpreted (both in the report itself and by others). First, the relationship between local mercury emissions reductions (known to have decreased dramatically between the late 1980s and the early 1990s) and decreasing levels of mercury in biota (documented to have occurred between the early 1990s and the present, but not to the same degree everywhere in south Florida) needs to be explored to determine how much of the latter was caused by the former. Second, to the extent this relationship can be understood, the degree to which it applies to coal-fired power plants in other parts of the country must be examined.

Relative to the first issue, although recent scientific studies demonstrate that some relationship exists between local mercury emissions reductions and local biotic response, the degree of the relationship has not been, nor can it be, definitively quantified for the time period addressed by the Florida study. First, there is no deposition record spanning the time before and after the emission reductions. Inferences from sediment cores are, at best, suggestive, and, at worst, inconsistent. Second, while aquatic model hindcasting (currently being conducted) suggests a link between deposition and response in aquatic biota, it cannot allocate the share of deposition changes coming from other source changes and the share of the biotic response coming from non-depositional ecosystem changes (e.g., hydrology, sulfate, phosphorous, dissolved oxygen content, etc.). To the extent that emissions reductions in the United States,

Europe, and other worldwide emissions changes were affecting the changes in deposition at the same time (also a study in progress), they would moderate the impact that local emissions changes were having on deposition changes. Similarly, to the extent hydrological and other ecosystem changes were also affecting biotic mercury levels, they would moderate the role of deposition changes. Finally, the atmospheric modeling conducted as part of the Florida study was flawed in several ways. The modeling erroneously assumes that mercury deposition in waterways comes only from local sources. Modeling by EPA and EPRI has shown that more than 90% of the mercury that currently deposits in south Florida originates outside the United States. Although in the late 1980s it is likely that the local contribution was somewhat higher than today, it could not have approached 100%. In summary, the magnitude of the connection between local mercury emissions reductions in south Florida and local biotic response is tempered by the contributions from other mercury emissions changes worldwide and other ecosystem changes affecting the biotic response.

As to the second issue, there are numerous reasons why the Florida results cannot be extrapolated to coal-fired power plants in other areas of the country. The south Florida area presents a unique combination of emissions, climatology, and ecosystems. First, municipal and medical waste incinerators -- not power plants -- are the source of industrial mercury emissions in south Florida that are referenced in the Florida report. Incinerators produce far higher percentages of ionic mercury -- the form of mercury that is water-soluble and more readily deposited -- than coal-fired power plants, and have far shorter stack heights resulting in the potential for higher amounts of mercury being deposited near those sources. Second, there is evidence that ionic mercury emissions from coal-fired power plants rapidly converts to elemental mercury -- the form of mercury having a long atmospheric residence time -- a phenomena not

observed in incinerators, which suggest that the link between emissions and local deposition would be even less for coal-fired power plants. Third, the climatology of south Florida is unique to the United States with daily, deep convective thunderstorms that converge over the Everglades in the summer. Fourth, the Everglades are not representative of waterways in the United States because they are in a subtropical zone with no distinct seasons and high rainfall in the summer, contain shallow water with very low flow rates, and have bottom sediments that differ from those in other locations. Other waterbodies also have different levels of acidity, biological activity, dissolved oxygen, and turbidity. All of these differences can dramatically affect mercury cycling and uptake by biological organisms and make extrapolation of the Florida results to other areas of the country inappropriate. In summary, the extrapolation of the Florida study or data to other sources and areas of the country is inappropriate.

For these reasons, the Florida study cannot justify a conclusion that coal-fired power plants create local "hot spots" nor can the results be extrapolated to coal-fired power plants in other parts of the country.

A cap-and-trade program will not create "hot spots." What an emissions trading program *will* accomplish is economically efficient decisions to reduce emissions from power plants. The Title IV Acid Rain Program[127] has demonstrated that utilities will control units with the highest emissions first because the cost per pound of mercury controlled is lowest at these units. Furthermore, EPRI modeling clearly demonstrates that cap-and-trade does not create hot spots relative to MACT.[128]

---

[127] Swift, Allowance Trading and Potential Hot Spots -- Good News from the Acid Rain Program, Environment Reporter, Vol. 31, No. 19, at 954-59 (May 12, 2002).

[128] EPRI Comments on EPA Proposed Emission Standards/Proposed Standards of Performance, Electric Utility Steam Generating Units: Mercury Emissions (June 16, 2004).

2. Calculation of the Baseline for Allowance Allocation

EPA proposes to calculate the baseline heat input by using the average of the three highest annual heat input levels of the period 1998 to 2002.[129] Although this approach does prevent any manipulation of the baseline through actions such as fuel switching, it also has the disadvantage that the heat input data will be outdated by the time the trading program begins. As an alternative, Southern suggests using the average of the three highest annual heat input levels from the period 1999 to 2003, which would be closer in time to when the actual trading program begins while avoiding opportunities to affect the baseline.

EPA also proposes to use 1999 information collection request data to determine the coal-type usage patterns of units.[130] Some units may have made a change in their coal usage to comply with Phase II of the Title IV Acid Rain Program, which began in 2000, or the NOx SIP Call, which begins in May 2004. As a result, the use of 1999 data may not accurately represent the coal-type usage pattern for a unit. Consequently, EPA should permit units that had a significant change in coal-type usage since 1999 to provide EPA with updated information before allocations are finalized. To avoid possible manipulation of the factors, EPA could restrict a unit from using coal-type usage data after an appropriate year, e.g., after proposal or promulgation of this rule.

3. Southern Favors Having Permanent Allocations of Allowances with a Set Aside for New Sources.

Southern believes that the mercury cap-and-trade program should have permanent allocations of mercury allowances because permanent allocations provide units with the greatest

---

[129] 69 Fed. Reg. at 4703. EPA would then adjust this baseline heat input using the adjustment factors discussed above in section IV.

[130] *Id*.

amount of certainty, which aids in planning. Permanent allocations also provide units with an incentive to improve energy efficiency and require fewer resources to administer as compared to an updated allocation system. To avoid a situation that impedes new units from entering service, Southern suggests that EPA include a set aside of two percent of allowances in the permanent allocation system.

4. Auctions

As a general rule, Southern opposes auctions of emissions allowances. If EPA proceeds to promulgate a cap-and-trade program under § 111, Southern opposes allowing states to hold auctions to sell allowances to the highest bidders (or any other method to sell allowances) rather than simply allocating them to sources within their borders. As discussed above, states lack authority under § 111 to make decisions that will change the stringency of EPA's standard of performance. If EPA permits states to sell allowances at an auction (or otherwise) rather than allocate them for free, the cost analysis for the standard of performance that EPA conducted will be significantly altered, leading to a change in the standard itself.

Moreover, a fundamental problem exists with selling allowances to sources. In that situation, sources end up paying for the right to emit even the tons that are *under* the cap, which is completely counter to the principle that regulated sources should pay only to control emissions *down to* the cap. The costs of the cap-and-trade program would be vastly increased -- to the point of losing cost effectiveness -- if allowances are sold or auctioned.

If EPA instead decides, as Southern supports, to promulgate a cap-and-trade program under a § 112(n)(1)(A), then any allowance auction program should be patterned after the Title IV program and be similarly limited in scope. For example, an auction should not be for initial allocations of allowances, but should be only for a very small percentage of allowances each year as in the Title IV program. In addition, EPA should not deposit any revenues from allowance

auctions in the general revenues under the Miscellaneous Receipts Act. Instead, EPA should redistribute the revenues to compliance account holders on a proportional basis as occurs in the Title IV program.

5. Safety Valve

Southern generally supports EPA's proposal to have a safety valve provision for the mercury cap-and-trade program, which would allow units to "borrow" future year allowances for use in earlier years. A safety valve provision will provide units with additional flexibility, particularly during the beginning of the program when technology may not be fully implemented. EPA needs to change its safety valve proposal, however, to structure it so that units borrow from years of allowances already allocated to them and not from the general pool of allowances. If units are allowed to borrow from the general pool of allowances, this unfairly results in a situation where units that did not borrow future allowances are forced to bear part of the burden of a reduced number of allowances in future years. Instead, EPA should structure the safety valve provision so that a unit borrows its own future year allowances from itself.[131] Rather than depositing funds received from the purchase of safety valve allowances in the U.S. Treasury, Southern suggests providing these funds to DOE to assist in the development of innovative mercury emissions control projects.

6. Southern Supports EPA's Proposal To Permit Banking of Allowances Without Restriction.

Southern supports EPA's proposal to allow banking of allowances without restriction. Banking is an essential element of a cap-and-trade program because it rewards sources for

[131] This approach works best with a permanent allocation system where a unit has been allocated all of its allowances. It can also work with an updated allocation system, however, by structuring the safety valve mechanism so that units borrow from future years of allowances already allocated to them.

creating emission reductions beyond required levels by allowing the source to bank any unused allowances for use later. Banking provides an incentive for sources to reduce their emissions earlier and in greater amounts.

7. EPA Should Create an Early Reduction Credit Program.

To aid in the development of mercury emissions control technologies and to stimulate the development of new mercury-specific controls, Southern supports the creation of an early reduction credit program into the mercury trading program. Any early reduction credit program should be limited to mercury-specific controls, and units should not receive credits for the installation of controls designed primarily to reduce non-mercury emissions, such as scrubbers or SCRs. EPA should create a small reserve of early reduction credits and award them for reductions of mercury emissions by 2014 from mercury-specific controls that go beyond the co-benefit reductions achieved from NOx or SO_2 controls.

8. EPA Should Exclude Units Emitting Less Than 25 Pounds of Mercury Per Year from the Cap-and-Trade Program.

Southern agrees with EPA's concerns regarding whether mercury-specific control technologies under development will practically apply to sources that emit less than 25 pounds of mercury per year.[132] As long as EPA does not lower the overall cap for mercury emissions by the small amounts that these sources emit (i.e., the cap for 2018 remains 15 tons for those units subject to the cap-and trade program), Southern supports exclusion of these units from the cap-and-trade program.[133]

---

[132] 69 Fed. Reg. at 4699.

[133] If EPA decides to proceed with a MACT approach, Southern also supports excluding these units from the MACT requirements.

9. State Interference with the Cap-and-Trade Program Must Be Prohibited.

States cannot be permitted to interfere with any cap-and-trade program for mercury. If its state law permits, a state presumably may have authority to impose a more stringent mercury emissions limitation on sources within its borders. That limitation would not be federally enforceable, however. If states choose to impose more stringent limitations under state law, sources within the state will presumably have extra mercury allowances that would no longer be needed to cover their mercury emissions. EPA must expressly prohibit states from restricting the ability of sources to sell or trade any mercury allowances issued under either a § 111[134] or § 112 cap-and-trade program.

Similarly, EPA must also prohibit states from interfering with the EPA-established cap on mercury emissions. For example, if a state decides to require sources within the state to surrender two allowances for every ounce of mercury emissions, this results in a reduction of the nationwide cap on mercury emissions that EPA set. EPA needs to make clear in the final rule that this type of state regulation is prohibited. States also must be prohibited from placing restrictions on the sale of mercury allowances by sources within their borders (such as prohibiting sales to certain other states) because these types of restrictions will result in a fundamental change to the trading program. To ensure a successful trading program, Southern urges EPA to prohibit states from interfering with the cap-and-trade program.

[134] As discussed above, the CAA prohibits state interference with the fundamental aspects of a cap-and-trade program under § 111.

10. EPA Should Not Require Units in "Sensitive" Areas To Surrender More Allowances than Other Areas Deemed Less Sensitive.

For any cap-and-trade program to be successful, one allowance should permit a source to emit one ounce of mercury anywhere in the United States. Units in "sensitive" areas should not be required to surrender more allowances than units in other areas deemed less sensitive (e.g., requiring some units to surrender two allowances for an ounce of mercury emissions than the standard one allowance).[135] If different areas have to surrender different numbers of allowances than other areas, this will greatly and unnecessarily complicate the trading program and will lower the cap. In addition, EPA's proposal does not describe how it would define such an area, nor does EPA describe how it would identify sources "in" such an area. Beyond this, EPRI modeling clearly shows that such a small portion of power plant emissions deposit within 50 kilometers (less than 5%) that adopting such a proposal would have little to no impact on actual mercury deposition. Adoption of this proposal would also add a great deal of complexity to the program, complexity that is unnecessary given the minute additional deposition reduction that would occur.

V. Monitoring and Compliance Issues

Southern supports and incorporates by reference the comments of UARG on monitoring and compliance issues. In particular, Southern believes that both proposed measurement methods for mercury (proposed Performance Specification 12A for mercury CEMS and the proposed Method 324 sorbent trap monitoring system) are reasonable first steps in the process of

[135] As discussed above, there is no evidence that "sensitive" areas would be impacted to any great degree by utility emissions. Only 2 to 3% of the gaseous ionic mercury emitted from coal-fired power plants deposits within 10 kilometers of the stack. EPRI Comments on EPA Proposed Emission Standards/Proposed Standards of Performance, Electric Utility Steam Generating Units: Mercury Emissions (June 16, 2004), at 62 (Table B.1-12).

defining requirements for use of these relatively new technologies as compliance methods. Because of the uncertainties surrounding how the technologies (particularly mercury CEMS) will perform in the field, however, Southern encourages EPA to continue to evaluate data between now and the established compliance date to identify any necessary improvements or adjustments. In addition, Southern urges EPA to consider the following specific comments regarding monitoring and compliance issues.

A. EPA Should Not Restrict the Use of Method 324 or Place Additional Quality Assurance Test Requirements on Sources Using Method 324.

All units should be able to choose between mercury CEMS and a sorbent trap method meeting Method 324 for the purposes of mercury monitoring. The choice of methods is critical to the success of any mercury regulatory program because of the uncertainties regarding mercury monitoring technology. Mercury CEMS are in the very early stages of development and have not yet been used in any regulatory program. Like mercury CEMS, Method 324 measures mercury emissions in stack gases on a continuous basis. EPA has already concluded based on "recent field studies" that sorbent trap systems "are capable of providing accurate measurements of mercury concentrations that compare favorably to measurements made with mercury CEMS."[136]

Southern finds no basis for restricting use of Method 324 sorbent trap monitoring systems to some small class of units that meets a low-emitter threshold, or requiring the performance of relative accuracy tests or audits on sorbent traps more frequently than annually. EPA's arguments regarding the need to limit alternatives to CEMS in order to provide consistency with SO_2 and NOx trading programs is baseless. No such requirement exists, and alternative

[136] 69 Fed. Reg. at 12417.

monitoring methods should be evaluated on their own merits. Data indicate that Method 324 will provide data that are at least as accurate as mercury CEMS (if not more accurate) without the additional quarterly relative accuracy tests EPA proposes. Sorbent trap monitoring systems do not use the same technology as mercury CEMS, do not require calibration at the installation site, and cannot be calibrated to another test method or reference gas. Method 324 itself contains a number of requirements intended to ensure the quality of data under the method, including pre- and post-sampling leak checks for each sorbent trap used, analysis of the backup section, paired-trains, field blanks, field spikes, solution blanks, duplicate analysis of samples, and calibration of the instrument used in the laboratory following the analysis of every tenth sample.[137]

B. EPA Should Not Require New Units To Use CEMS.

Southern disagrees with EPA's proposal to prohibit any new units that commence commercial operation more than six months after publication of the final rule from using any method other than CEMS to monitor mercury.[138] EPA has no basis for this restriction and should not include it in the proposal. New units should also have the option of performing monitoring using mercury CEMS or using Method 324.

C. Special Rules for Method 324

Proposed 40 C.F.R. § 75.15(h) requires, for each pair of sorbent traps analyzed, that the higher of the two mercury concentrations be used for calculating and reporting emissions. If Method 324 is going to require the analysis of paired sorbent traps, Southern believes that the average of the two sorbent trap concentrations should be used for calculating and reporting emissions. EPA should revise proposed § 75.15(h) to allow for this averaging.

---

[137] Proposed Method 324, § 9-11.

[138] Proposed 40 C.F.R. § 75.81(c).

D. Issues Related to Data Availability, Missing Data, and Quality Assurance/Quality Control

EPA's proposed application of the missing data procedures for SO_2 to mercury and the bias adjustment procedures for other monitoring procedures is not supported. Those missing data procedures were established for monitoring technology that had been in use for many years -- and then only after review and analysis of data to determine the impacts of the proposed data substitution procedures on overall emissions. No such analysis has been done for mercury. Similarly, EPA has not undertaken any analysis to determine the ability of mercury CEMS to meet the bias test performance specification or to explain why a method, like Method 324, that has been validated with EPA Method 301 should be subject to further bias testing.

Proposed PS 12A and Method 324 both make clear that they are designed to measure vapor-phase mercury. Proposed 40 C.F.R. § 75.59(a)(7), however, includes requirements to record and report particle bound mercury results obtained during relative accuracy test audit testing. EPA should remove this inconsistency by revising § 75.59(a)(7) such that particle bound mercury results are not required to be reported and that the filterable portion of the reference method sample is not included when comparing with CEMS.

EPA has proposed a missing data scheme for Method 324 that requires substitution of increasingly high values when results from either of the two traps are not available (1.5 times the highest value in the last 12 months when availability is between 80 and 90 percent, and the maximum potential mercury concentration when availability is below 80%). Although availability for Method 324 monitoring systems is likely to be better than mercury CEMS, as proposed, a single missing data event will result in a greater amount of missing data because each trap provides several days' worth of data. Southern believes EPA should revise these substitution provisions to be less punitive for sources using Method 324.

Southern believes that the use of "maximum potential" values should not be applied to mercury in the same way as applied to other pollutants, as EPA has proposed using such values to fill in missing data for mercury when monitoring systems are not certified or missing data fall below a certain level. Because sources with controls will be operating these controls for other pollutants, they are unlikely to ever emit a maximum potential value of mercury. EPA should revise this requirement given that very little is currently known about the availability of mercury monitoring systems.

Finally, EPA has proposed requiring laboratories that perform analysis for Method 324 to be certified by the International Standards Organization ("ISO") to have proficiency that meets the requirements of ISO 9000. Southern does not believe EPA is justified in including this requirement in its proposal. EPA has provided no information to suggest it has considered the additional cost associated with certification, the availability of certified laboratories, or the benefits of requiring such a certification. Requiring laboratories performing Method 324 analyses to be ISO 9000 certified will not necessarily result in better data. Given the cost of certification and the lack of an associated benefit, Southern believes this requirement is unnecessary and should be removed from EPA's proposal.